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AIRLINE
MODEL 25GSL-1814A

PROPERTY OF
L. F. BLANKENSHIP
3924 MEADE ST.
DENVER, COLORADO

AIRLINE
MODEL 25GSL-1814A

AIRLINE
MODEL 25GSL-1814A

TRADE NAME	Airline Model, 25GSL-1814A
SUPPLIER	Montgomery Ward & Co., 619 Chicago Ave., Chicago, Ill.
TYPE SET	AC/DC Operated AM Superheterodyne Receiver
TUBES (Six)	Types 12AU6 Mixer, 6C4 Osc., 12BA6 IF Amp., 12AV6 Det. -AVC-AF Amp., 50C5 Audio Output, 35W4 Rectifier
POWER SUPPLY	110-120 Volts AC-DC RATING .21 Amp. @ 117 Volts AC
TUNING RANGE—BROADCAST	540-1600 KC

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

Use isolation transformer, if available. If not, connect a .1MFD capacitor in series with low side of signal generator and B-. Volume control should be at maximum position. Output of signal generator should be no higher than necessary to obtain an output reading. Use an insulated alignment screwdriver for adjusting .

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
1.	.05MFD	High side to rear stator plates on tuning gang. Low side to B-.	455KC (400~Mod.)	Point of non-interference	Across voice coil	A1, A2, A3, A4	Adjust for maximum output. If isolation transformer is not used, reduce dummy antenna to .001MFD to reduce hum modulation.
2.	"	"	1620KC	Tuning gang fully open	"	A5	Adjust for maximum output.
3.		Loop	1400KC	Tune for maximum signal. Set pointer at 1400 KC on dial.	"	A6	Fashion loop of several turns of wire and radiate signal into loop of receiver. Adjust for maximum output.

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PARTS LIST AND DESCRIPTIONS

AIR LINE
MODEL 25GSL-1814A

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA		RTMA BASE TYPE	INSTALLATION NOTES
		AIR LINE PART No.	STANDARD REPLACEMENT		
V1	Mixer	12AU6	12AU6	7BK	
V2	Oscillator	6C4	6C4	6BG	
V3	IF Amplifier	12BA6	12BA6	7BK	
V4	Det.-AVC-AF Amp.	12AV6	12AV6	7BT	
V5	Audio Output	50C5	50C5	7CV	
V6	Rectifier	35W4	35W4	5BQ	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING		REPLACEMENT DATA							NOTES
	CAP.	VOLT	AIR LINE PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	MALLORY PART No.	SPRAGUE PART No.	
C1A	40	150	N-5051	PRS150/40-40		EDL4415		2N511	TVA-2445	Blue Red
B	40	150								
C2	.05	200	N-1345	P288-05	DF-503	PJ2S5		PT415	2TM-S5	
C3	.01	400	N-1344	P488-01	D6-103	PTE4S1	GP2-333-103	PT411	4TM-S1	
C4	.05	200	N-1345	P288-05	DF-503	PJ2S5		PT415	2TM-S5	
C5	.05	200	N-1345	P288-05	DF-503	PJ2S5		PT415	2TM-S5	
C6	100		N-6015	SI100	D6-101	TM5T1	GP1K-101	UC-531	5GA-T1	
C7	.005	600	N-4894	P688-005	D6-502	PTE6D5	GP2-333-502	PT625	6TM-D5	
C8A	.005									
B	250				♦PC-71		♦1406-02		♦104C5	
C										
C9	.02	400	N-1376	P488-02	DF-203	PTE4S2		PT412	4TM-S2	
C10	.05	400	N-1346	P488-05	DF-503	PTE4S5		PT415	4TM-S5	
C11	.08	200	N-8092							

♦ Items C8A, C8B, C8C, R8A, R8B are combined in one unit.
When replacing items separately C8B and C8C should total 250MMF
Some Models use separate items C8A part #N-4894, C8B part #N- 6488 and C8C not used.

CONTROLS

ITEM No.	RATING		REPLACEMENT DATA					INSTALLATION NOTES
	RESISTANCE	WATTS	AIR LINE PART No.	IRC PART No.	CLAROSTAT PART No.	CENTRALAB PART No.	MALLORY PART No.	
R1A	500KΩ	½	N-7984	Q13-133	AG-60-Z	BSK-60-S	U-48	Volume
B	Shaft		Not Req.	Not Req.	KSS-3	Not Req.	Not Req.	Attach to R1A
C	Switch		Not Req.	76-1	SWB	Not Req.	US-26	Attach to R1A

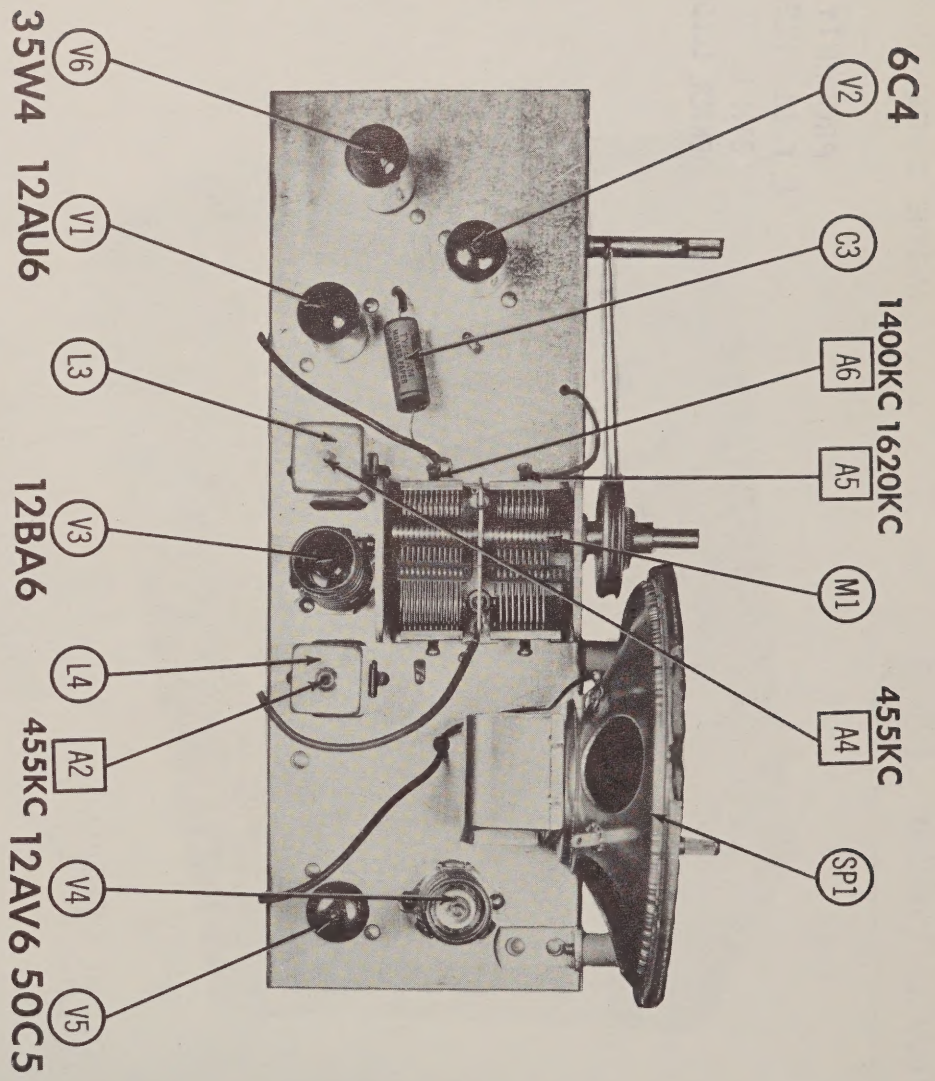
RESISTORS

ITEM No.	RATING		REPLACEMENT DATA		NOTES
	OHMS	WATT	AIR LINE PART No.	IRC PART No.	
R2	3.3Meg	½	N-4062	BTS-3.3Meg	
R3	47KΩ	½	N-4063	BTS-47K	
R4	47KΩ	½	N-4063	BTS-47K	
R5	1Meg	½	N-1262	BTS-1Meg	
R6	68Ω	½	N-6485		
R7	6.8Meg	½	N-4028	BTS-6.8Meg	

ITEM No.	RATING		REPLACEMENT DATA		NOTES
	OHMS	WATT	AIR LINE PART No.	IRC PART No.	
R8A	250KΩ	½	♦N-8215		
B	500KΩ	½			
R9	180Ω	½	N-4067	BTS-180	
R10	1000Ω	½	N-3341	BTS-1000	
R11	33Ω	½	N-4022		
R12	22Ω	1	N-4713		

♦ Items R8A, R8B, C8A, C8B, C8C are combined in one unit.
Some Models use separate items R8A part #N-4026, R8B part #N-4027

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	RATING				REPLACEMENT DATA					NOTES
	IMPEDANCE		DC RES.		AIRLINE PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	TRIAD PART No.	
	PRI.	SEC.	PRI.	SEC.						
T1	2.47KΩ	3.3Ω	150Ω tap ⓐ 6.1Ω	.66Ω	N-8001	A-3330	A-3031	RO-3		

SPEAKER

ITEM No.	RATINGS			REPLACEMENT DATA			NOTES
	SIZE	FIELD	V. C. IMP.	AIRLINE PART No.	JENSEN PART No.	QUAM PART No.	
SP1	5"	PM	3.3Ω	N-7980	ST-105 Mod. P5-X	5A07	

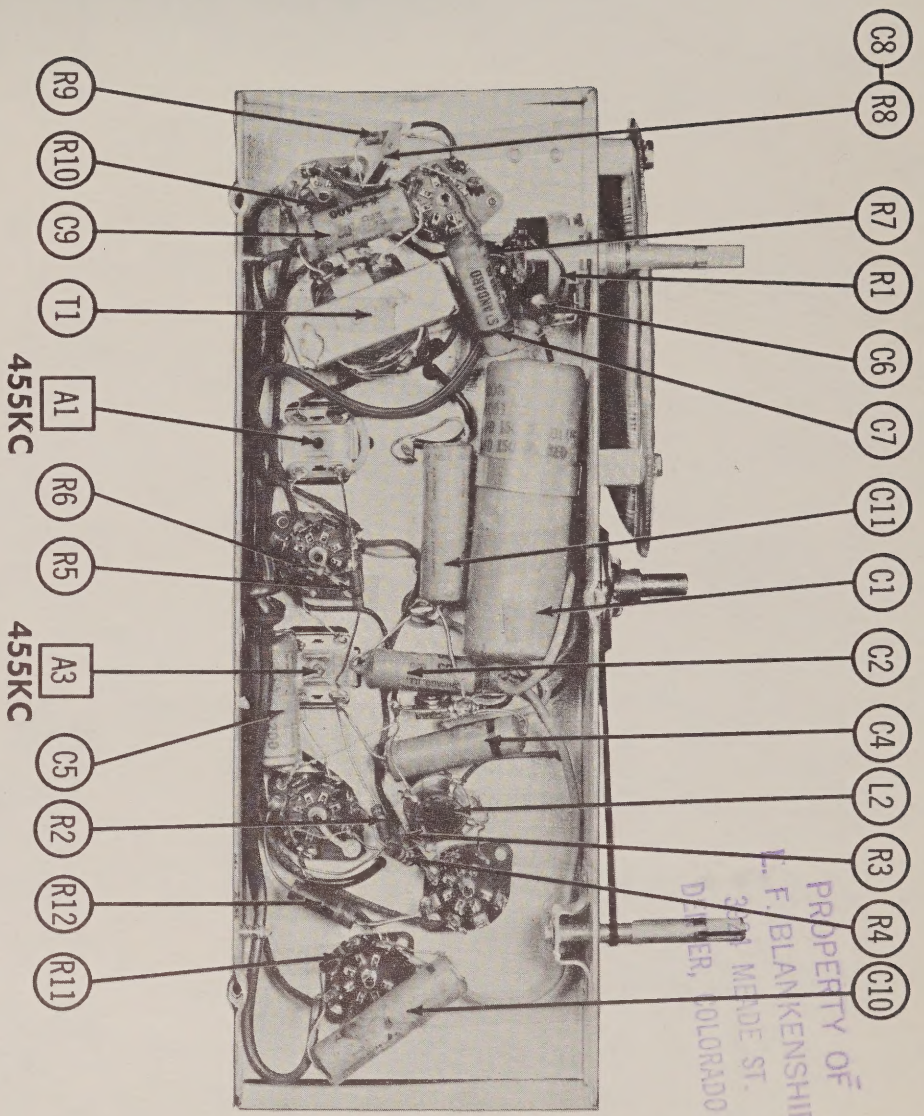
COILS (RF-IF)

ITEM No.	USE	DC RES.		REPLACEMENT DATA			NOTES
		PRI.	SEC.	AIRLINE PART No.	MERIT PART No.	MILLER PART No.	
L1	Loop Ant.	.2Ω	0Ω	N-8769			Includes cabinet back
L2	Osc. Coil	5Ω	8Ω	N-8571			Pri. winding tapped ⓐ 4.8Ω
L3	Input IF	17Ω	14.5Ω	N-7981	BC-352	12-C1	
L4	Output IF	13.5Ω	13.5Ω	N-7981	BC-353	12-C2	

MISCELLANEOUS

ITEM No.	PART NAME	AIRLINE PART No.	NOTES
M1	Tuning Capacitor	N-8784	12-433MMF, 10-122MMF
	Cabinet	#369	Mahogany
	Knob	N-8771	Mahogany-Tuning, Off/On Volume
	Dial Scale	N-8773	Plastic
	Dial Background	N-8772	Flocked metal
	Dial Pointer	N-8775	

CHASSIS—BOTTOM VIEW



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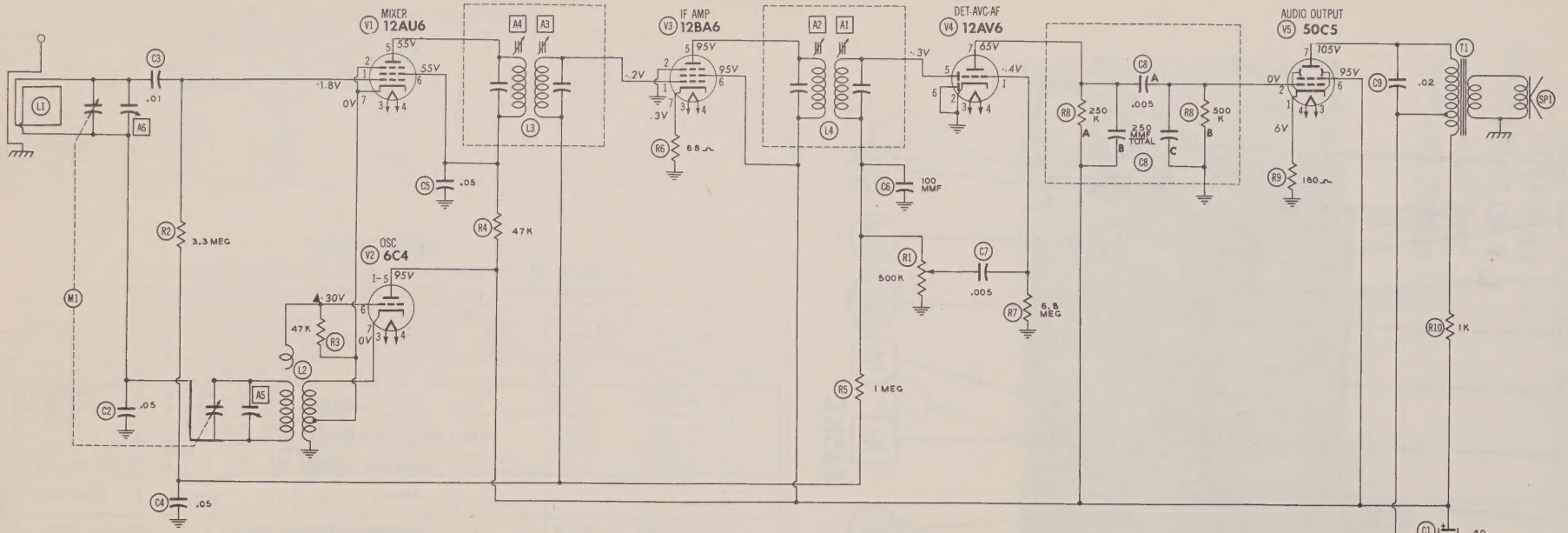
DENVER, COLORADO

AIRLINE
MODEL 25GSL-1814A



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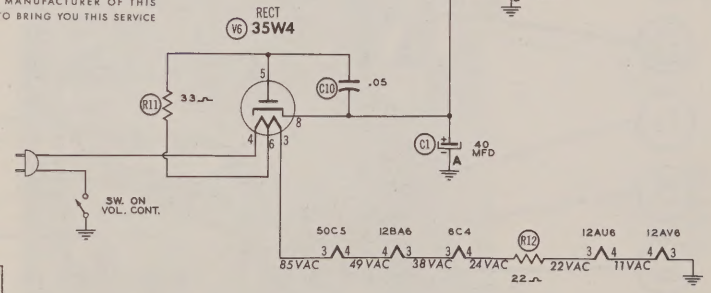

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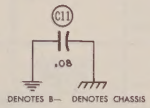

RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7
V 1	12AU6	4.8Meg	.2Ω	24Ω	12Ω	†48KΩ	†48KΩ	.2Ω
V 2	6C4	†1KΩ	INF	52Ω	46Ω	†1KΩ	47KΩ	5Ω
V 3	12BA6	1.5Meg	0Ω	52Ω	64Ω	†1KΩ	†1KΩ	68Ω
V 4	12AV6	6.8Meg	0Ω	0Ω	12Ω	500KΩ	0Ω	†250KΩ
V 5	50C5	180Ω	500KΩ	114Ω	64Ω	500KΩ	†1KΩ	†150Ω
V 6	35W4	INF	INF	114Ω	149Ω	143Ω	176Ω	250KΩ

† MEASURED FROM PIN 7 OF V6
▲ TAKEN WITH VACUUM TUBE VOLTMETER

A PHOTOFACT STANDARD NOTATION SCHEMATIC

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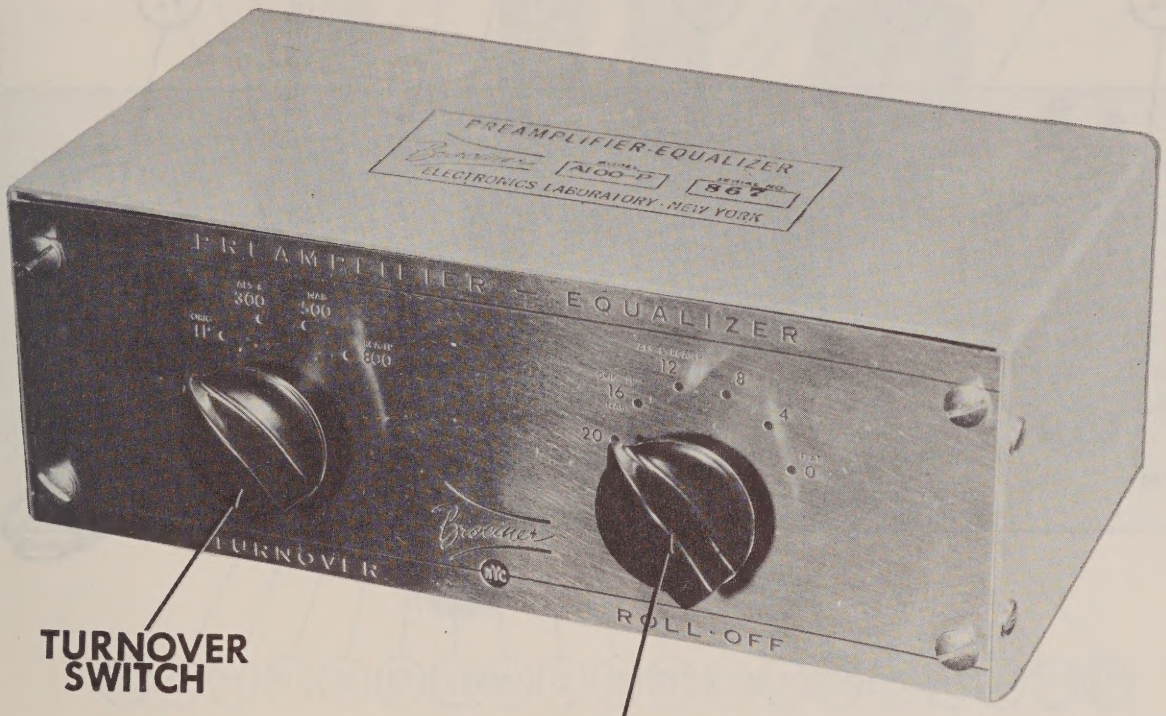
1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1,000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ± 10% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.

PROPERTY OF
L. F. BLANKENSHIP
3924 MEADE ST.
DENVER, COLORADO

BROCINER
MODEL A100P



BROCINER
MODEL A100P

TRADE NAME	Brociner Model A100P
MANUFACTURER	Brociner Electronics Lab., 1546 Second Ave., New York 28, N.Y.
TYPE SET	AC Operated 4 Channel Audio Pre-amplifier
TUBES (Two)	Types 12AY7 Pre-amp., 6C4 AF Amp.
POWER SUPPLY	110-120 Volts Volts AC-50/60 Cycle RATING .05 Amp. @ 117 Volts AC

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PARTS LIST AND DESCRIPTIONS

BROCINER
MODEL A100P

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA		RTMA BASE TYPE	INSTALLATION NOTES
		BROCINER PART No.	STANDARD REPLACEMENT		
V1	Pre Amplifier	12AY7	12AY7	9A	
V2	AF Amplifier	6C4	6C4	6BG	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING		REPLACEMENT DATA							NOTES
	CAP.	VOLT	PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	MALLORY PART No.	SPRAGUE PART No.	
C1A	■20	400		AFH2-51		BO40		FP234	TVA-2755	
B	▲20	400								
C2A	▲20	400		AFH2-51		BO40		FP234	TVA-2755	
B	■20	400								
C3	150	15		PRS150/150		BRH5015		TC1502	TVA-1311	
C4	50	150		PRS150/50		BR5015A		TC49	TVA-1414	
C5	180			SI180	D6-181		GP2K-181	UC-5318	5GA-T18	
C6	750	500		1464-00075						
C7	.1	400		P488-1	DF-104	PTE4P1		PT401	4TM-P1	
C8	.05	200		P288-05	DF-503	PJ2S5		PT415	2TM-S5	
C9	.05	200		P288-05	DF-503	PJ2S5		PT415	2TM-S5	
C10	.03	200		P488-03		PTE4S3		PT413	4TM-S3	
C11	.047	400		P488-047	DF-503	PTE4S47		PT4147	4TM-S47	
C12	910	500								
C13	510	500								
C14	300	500		1468-0003	D6-301	5W5T3	GP2K-301	MC241	MS-33	
C15	150	500		1468-00015	D6-151	5W5T15	GP2K-151	MC236	IFM-315	
C16	300	500		1468-0003	D6-301	5W5T3	GP2K-301	MC241	MS-33	
C17	.01	400		P488-01	D6-103	PTE4S1	GP2-333-103	PT411	4TM-S1	
C18	.1	400		P488-1	DF-104	PTE4P1		PT401	4TM-P1	

CONTROLS

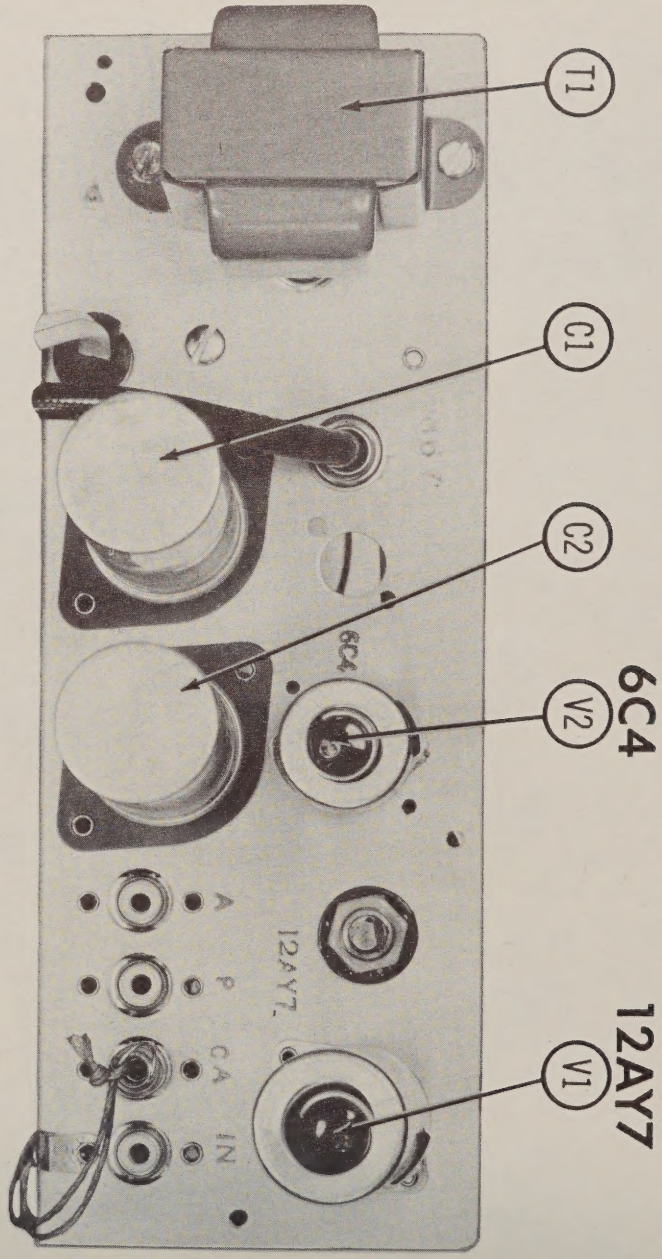
ITEM No.	RATING		REPLACEMENT DATA					INSTALLATION NOTES
	RESISTANCE	WATTS	BROCINER PART No.	IRC PART No.	CLAROSTAT PART No.	CENTRALAB PART No.	MALLORY PART No.	
R1A	250KΩ	½		Q11-130	AG-55-S	B-50	U-46	Gain
B	Shaft			Not Req.	RS-2	Not Req.	Not Req.	Attach to R1A

RESISTORS

ITEM No.	RATING		REPLACEMENT DATA		NOTES
	OHMS	WATT	BROCINER PART No.	IRC PART No.	
R2	68KΩ	½		BTS-68K	
R3	47KΩ	½		BTS-47K	
R4	1000Ω	½		BTS-1000	
R5	51KΩ	½			
R6	100KΩ	½		BTS-100K	
R7	3700Ω	½			
R8	24KΩ	½			
R9	560KΩ	½		BTS-560K	
R10	1000Ω	½		BTS-1000	
R11	51KΩ	½			

ITEM No.	RATING		REPLACEMENT DATA		NOTES
	OHMS	WATT	BROCINER PART No.	IRC PART No.	
R12	100KΩ	½		BTS-100K	
R13	100KΩ	½		BTS-100K	
R14	1000Ω	½		BTS-1000	
R15	33KΩ	½		BTS-33K	
R16	100KΩ	½		BTS-100K	
R17	330KΩ	½		BTS-330K	
R18	4700Ω	½		BTS-4700	
R19	4700Ω	½		BTS-4700	
R20	4700Ω	½		BTS-4700	

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

TRANSFORMER (POWER)

ITEM No.	RATING				REPLACEMENT DATA				
	PRI.	SEC. 1	SEC. 2	SEC. 3	Brociner PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	TRIAD PART No.
T1	117VAC @ .05A	160VAC .005ADC	6.3VAC @ .43A						

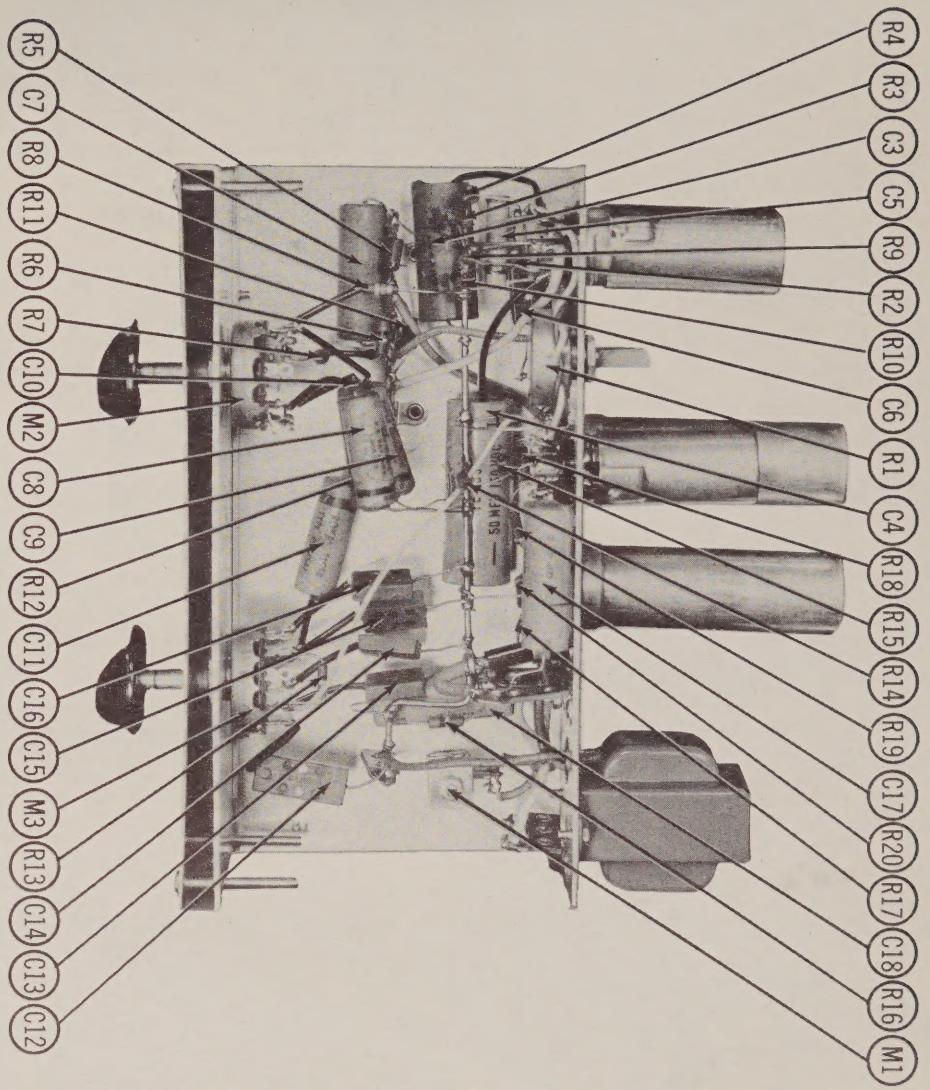
SELENIUM RECTIFIER

ITEM No.	RATING	REPLACEMENT DATA					
	CURRENT	Brociner PART No.	SYLVANIA PART No.	SELETRON PART No.	FEDERAL PART No.	MALLORY PART No.	SARKES TARZIAN PART No.
M1	.005A			8Y1 ①		8S20 ①	126-10H-Q or 026-10H-Q

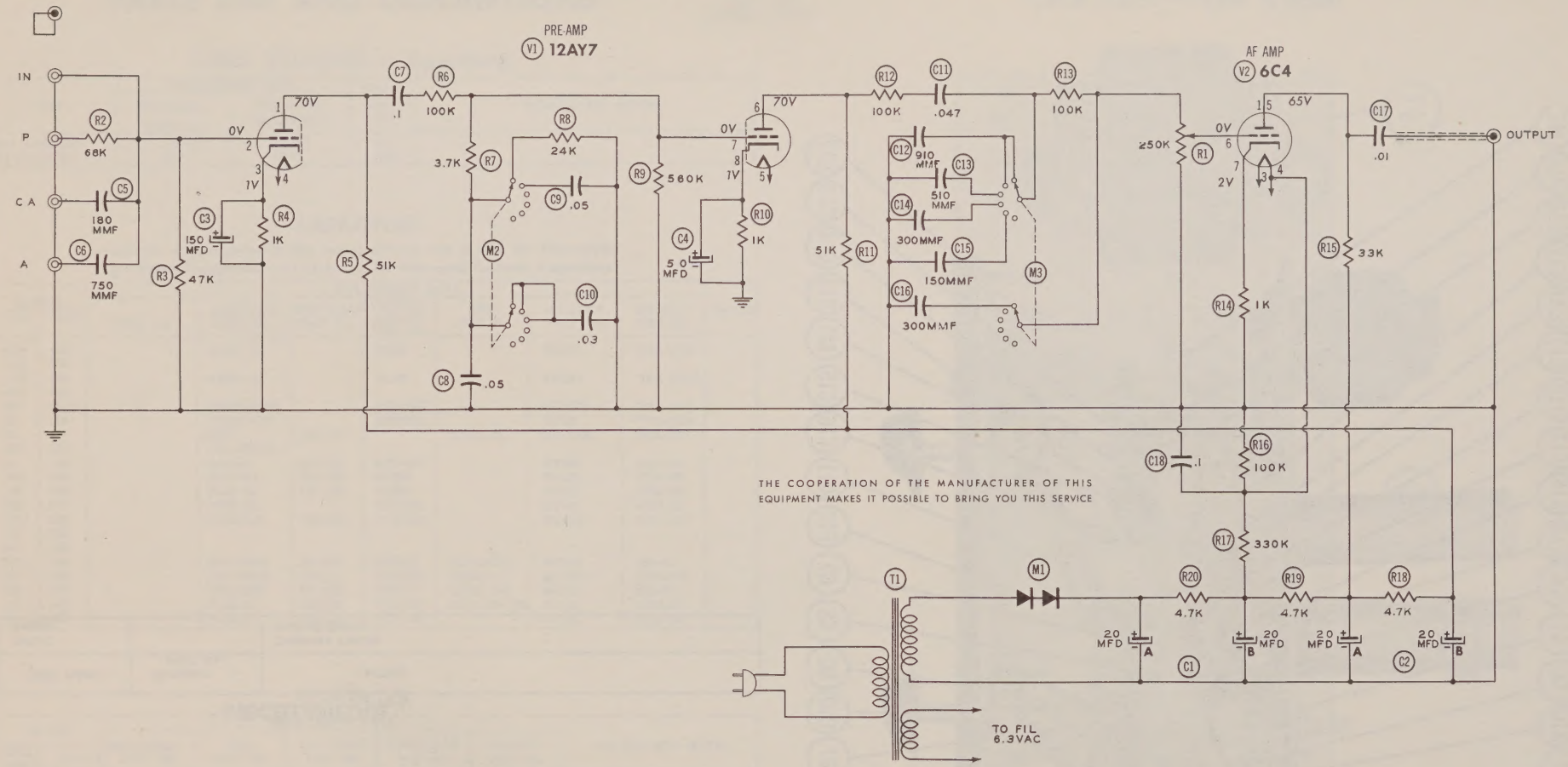
MISCELLANEOUS

ITEM No.	PART NAME	Brociner PART No.	NOTES
M2	Switch		Turnover Switch
M3	Switch		Roll-off Switch

CHASSIS—BOTTOM VIEW



BROCINER MODEL A100P



THE COOPERATION OF THE MANUFACTURER OF THIS EQUIPMENT MAKES IT POSSIBLE TO BRING YOU THIS SERVICE

RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V 1	12AY7	†65KΩ	47K Ω	1KΩ	†100KΩ	†100KΩ	†65KΩ	25KΩ	1KΩ	†100KΩ
V 2	6C4	†45KΩ	INF	†100KΩ	†100KΩ	†45KΩ	0Ω	1KΩ		

† MEASURED FROM OUTPUT OF M1

A PHOTOFACT STANDARD NOTATION SCHEMATIC

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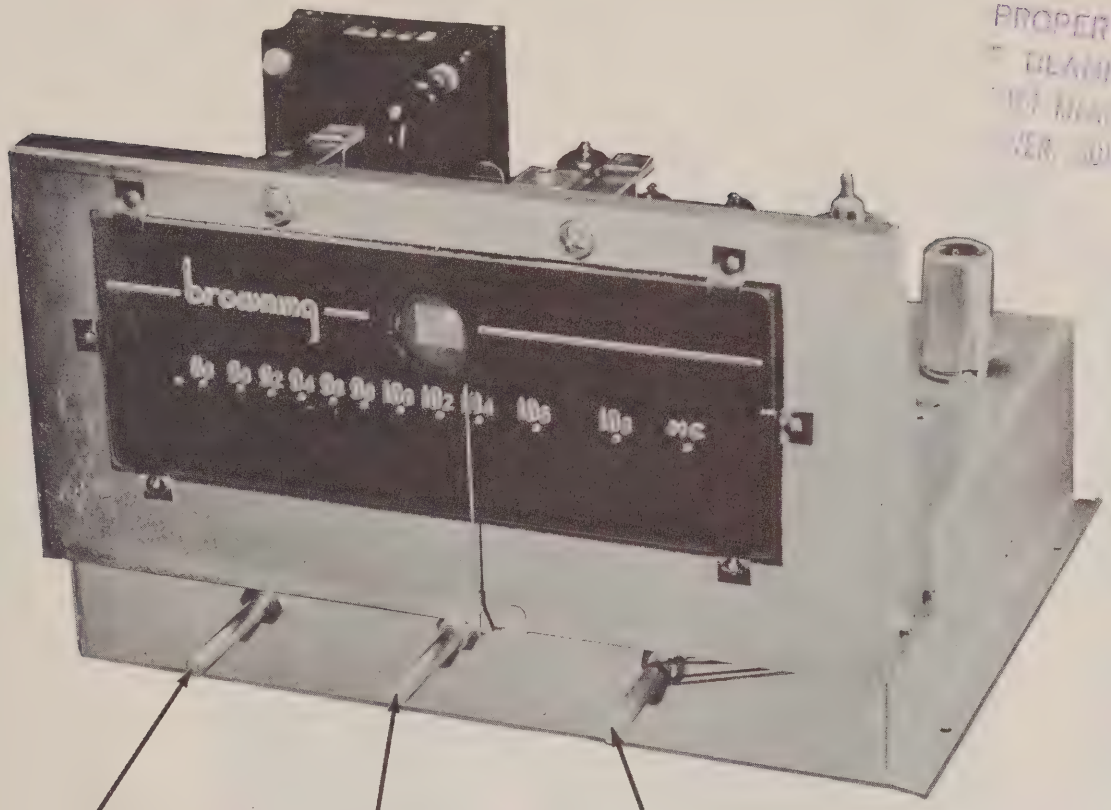
1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Nominal tolerance on component values makes possible a variation of ± 15% in voltage and resistance readings.
6. Are controls at minimum, proper output load connected.

PROPERTY OF
BLANKENSHIP

BROWNING
MODEL RV31



BROWNING
MODEL RV31

TRADE NAME	Browning Model RV-31
MANUFACTURER	Browning Laboratories, Winchester, Mass.
TYPE SET	AC Operated FM Superheterodyne Tuner for Custom Installation
TUBES (Eleven)	Types 12AT7 RF Amp., 12AT7 Conv., 6J6 AFC, (2) 6AU6 IF Amp., (2) 6AU6 Limiter, 6AL5 Disc,, 6AL7GT Tuning Ind., 6AU6 Cathode Follower, 5Y3GT Rectifier
POWER SUPPLY	110-120 Volts AC RATING .80 Amp. @ 117 Volts AC
TUNING RANGE	Freq. Mod. 88-108MC

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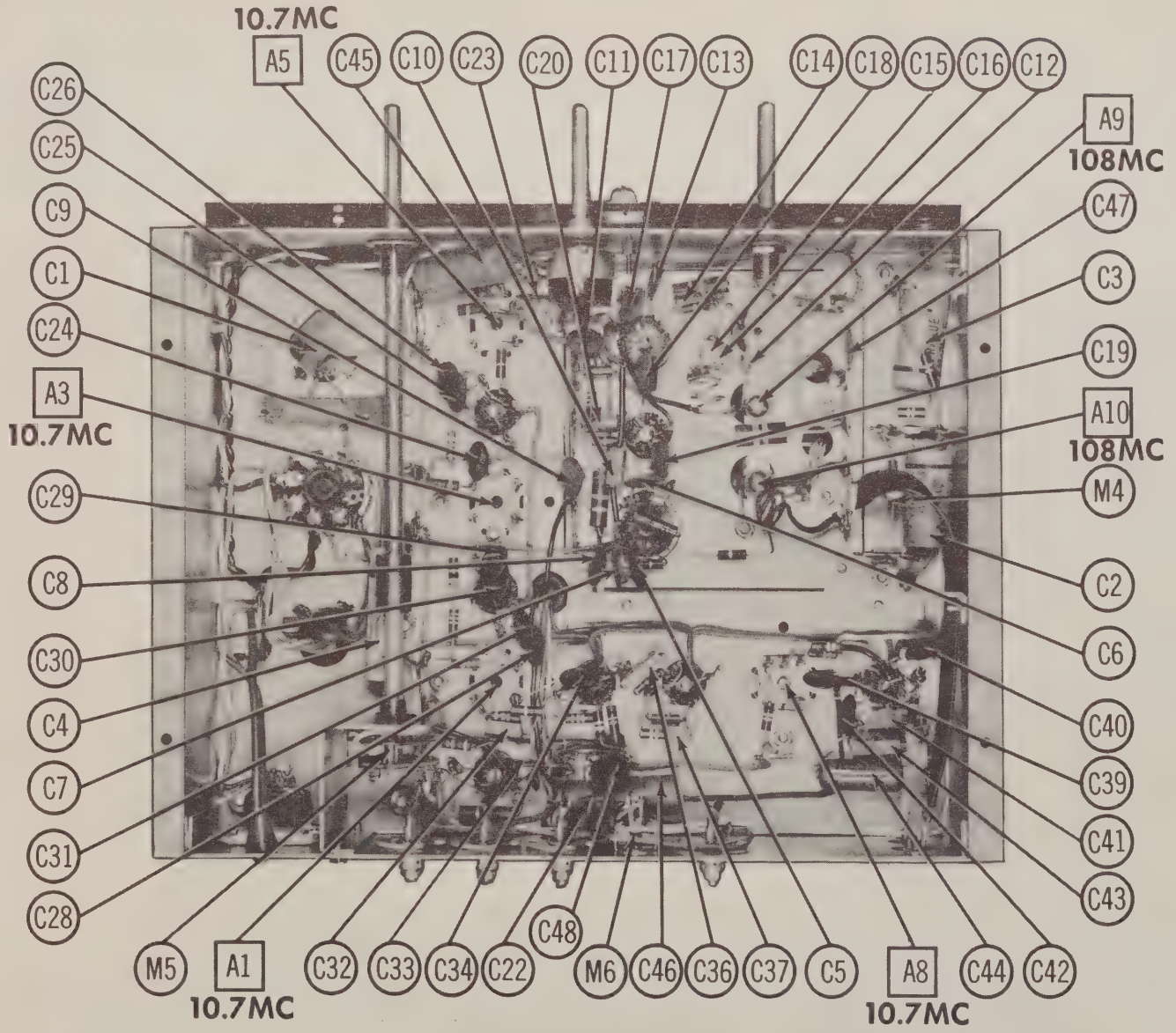
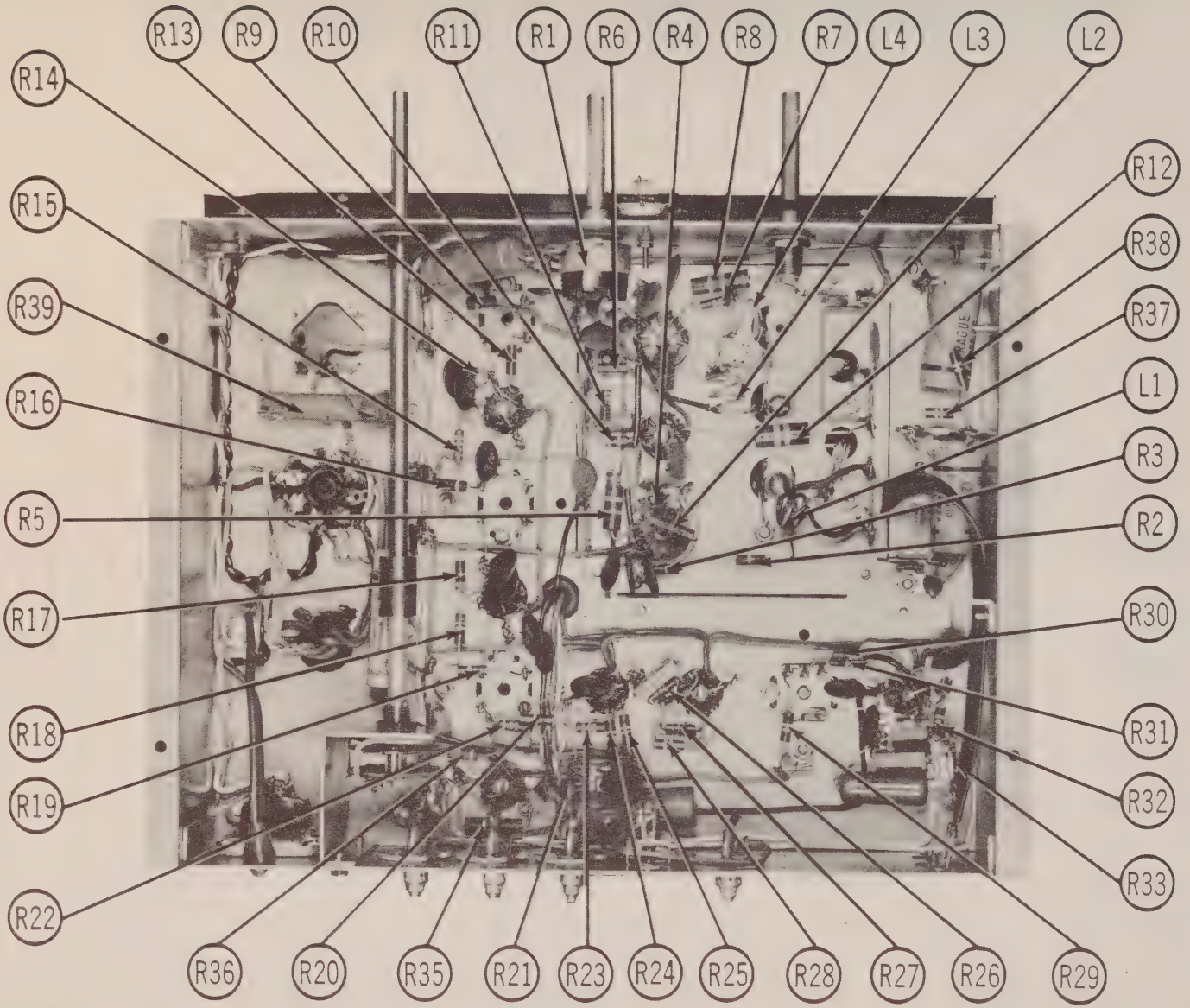
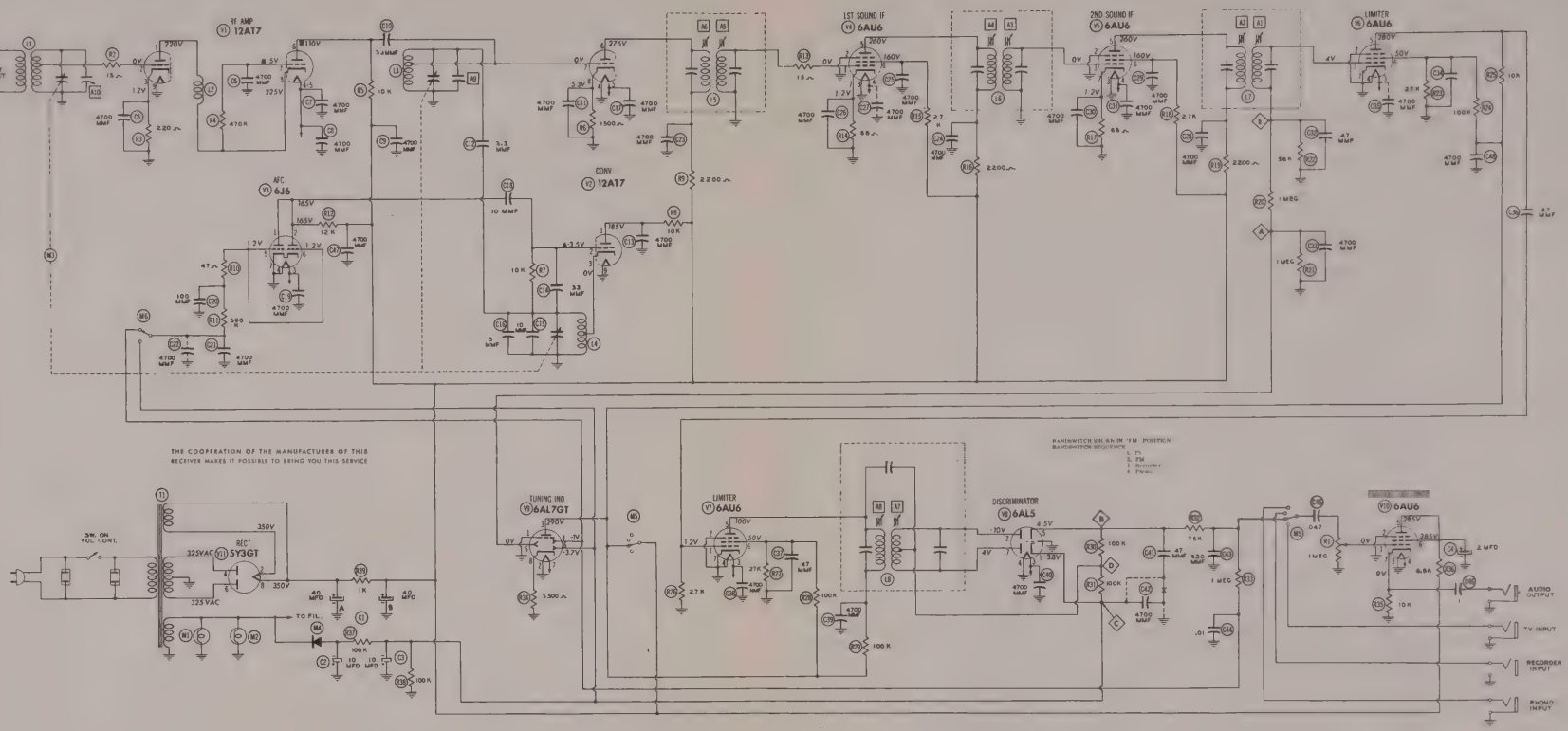


CHASSIS BOTTOM VIEW-CAPACITOR IDENTIFICATION



CHASSIS BOTTOM VIEW-RESISTOR IDENTIFICATION



IF = 10.7 – FM

1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1,000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ± 10% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.

RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V 1	12AT7	INF	15Ω	220Ω	.1Ω	.1Ω	†11KΩ	INF	INF	0Ω
V 2	12AT7	†11KΩ	10KΩ	220Ω	0Ω	0Ω	†3.2KΩ	0Ω	1.5KΩ	.1Ω
V 3	6J6	†13KΩ	†13KΩ	.1Ω	0Ω	1.5Meg	1.5Meg	0Ω		
V 4	6AU6	15Ω	0Ω	.1Ω	0Ω	†3.2KΩ	†28KΩ	68Ω		
V 5	6AU6	1.4Ω	0Ω	.1Ω	0Ω	†3.2KΩ	†28KΩ	68Ω		
V 6	6AU6	56KΩ	0Ω	.1Ω	0Ω	†10KΩ	25KΩ	0Ω		
V 7	6AU6	27KΩ	0Ω	.1Ω	0Ω	†100KΩ	25KΩ	0Ω		
V 8	6AL5	50KΩ	150KΩ	.1Ω	0Ω	250KΩ	0Ω	150KΩ		
V 9	6AL7GT	0Ω	0Ω	†1000Ω	1.2Meg	.6 Meg	50KΩ	.1Ω	3.3KΩ	
V 10	6AU6	0Ω	0Ω	0Ω	.1Ω	†7.8KΩ	†7.8KΩ	10KΩ		
V 11	5Y3GT	INF	60KΩ	.1Ω	184Ω	INF	154Ω	INF	60KΩ	

† MEASURED FROM PIN 8 OF V11

A PHOTOFACT STANDARD NOTATION SCHEMATIC
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ALIGNMENT INSTRUCTIONS

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

To set pointer, turn tuning capacitor fully closed and set pointer to last reference mark at low frequency end of dial.
Turn AFC Switch to "Off".
Use an insulated screwdriver for alignment adjustment.

FM IF ALIGNMENT USING AM SIGNAL GENERATOR AND VTVM

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	CONNECT VTVM	ADJUST	REMARKS
1.	.01MFD	High side to pin 7 (grid) of 12AT7 (V2). Low side to chassis.	10.7MC (Unmod.)	FM	Point of non-interference	DC probe to point (A). Common to chassis.	A1, A2, A3, A4, A5, A6	Adjust for maximum reading. Attenuate signal generator output so as to maintain a maximum reading of 5 volts.
2.	Deviate signal generator frequency 25KC above and below 10.7MC. The VTVM reading should be approximately the same above and below the center frequency and should continue to be equal out to a 75KC departure from 10.7MC. If not, repeat steps 1 and 2 until such condition exists.							
3.	.01MFD	High side to pin 7 (grid) of 12AT7 (V2). Low side to chassis.	10.7MC (Unmod.)	FM	Point of non-interference	DC probe to point (B). Common to point (C).	A7	Adjust for zero reading. A positive and negative reading will be obtained on either side of the correct setting.
4.	"	"	"	"	"	DC probe to point (D). Common to point (E).	A8	Adjust for maximum reading. Repeat steps 3 and 4 for optimum results.

FM IF ALIGNMENT USING FM SIGNAL GENERATOR AND SCOPE

Use frequency modulated signal with 60∿ modulation and 450KC sweep. Use 120∿ sawtooth voltage in scope for horizontal deflection.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	SCOPE CONNECT	ADJUST	REMARKS
1.	.01MFD	High side to pin 7 (grid) of 12AT7 (V2). Low side to chassis.	10.7MC (450KC Swp)	FM	Point of non-interference	Vert. amp to point (E) Low side to chassis.	A1, A2, A3, A4, A5, A6	Adjust for maximum amplitude & symmetry as per Fig. 1.
2.	"	"	"	"	"	Vert. amp to point (D) Low side to chassis.	A8	"
3.	"	"	"	"	"	Vert. amp. to point (B) Low side to chassis.	A7	Adjust so 10.7MC marker appears at center of cross-over lines, as per Fig. 2. SLIGHTLY retouch A8 for max. amp. and straightness of cross-over lines. Continue with step 5.

FM RF ALIGNMENT

The signal generator output lead should be terminated with its characteristic impedance, usually 50 ohms.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
5.	Two 120Ω Carbon Resistors	Across antenna terminals with 120Ω resistors in each lead.	108MC (Unmod)	FM	108MC	DC probe to point (A) Low side to chassis.	L4	Slightly expand or compress L4 coil turns for maximum reading.
6.	"	"	88MC	"	88MC	"		Spread or compress rotor plates of oscillator section of tuning gang for maximum reading.
7.	"	"	108MC	"	108MC	"	A9	Adjust for maximum reading. Repeat steps 5 and 7 for optimum results. Then repeat step 6.
8.	"	"	88MC	"	88MC	"		Expand or compress mixer section rotor plates for maximum reading, if necessary, as indicated by use of tuning wand on mixer grid coil.
9.	"	"	108MC	"	108MC	"	A10	Adjust for maximum reading.

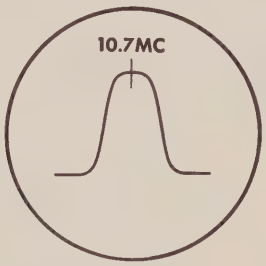


FIG. 1

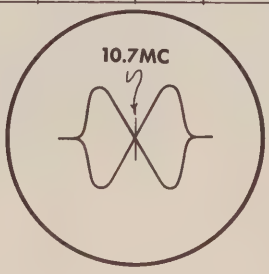


FIG. 2

PARTS LIST AND DESCRIPTIONS

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA		RTMA BASE TYPE	NOTES
		Browning PART No.	STANDARD REPLACEMENT		
V1	RF Amplifier	12AT7	12AT7	9A	
V2	Converter	12AT7	12AT7	9A	
V3	AFC	6J6	6J6	7BF	
V4	1st. Sound IF Amp.	6AU6	6AU6	7BK	
V5	2nd. Sound IF Amp.	6AU6	6AU6	7BK	
V6	Limiter	6AU6	6AU6	7BK	
V7	Limiter	6AU6	6AU6	7BK	
V8	Discriminator	6AL5	6AL5	6BT	
V9	Tuning Indicator	6AL7GT	6AL7GT	6CH	
V10	Cathode Follower	6AU6	6AU6	7BK	
V11	Rectifier	5Y3GT	5Y3GT	5T	

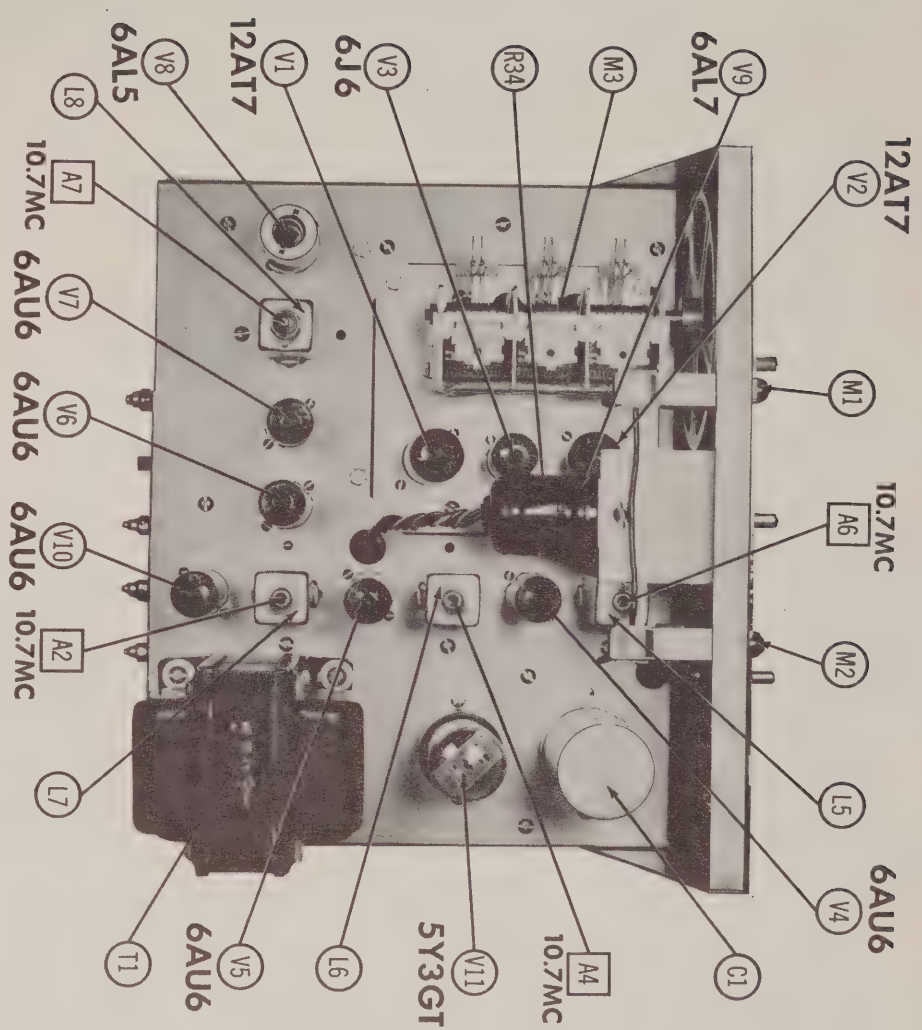
CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING		REPLACEMENT DATA							NOTES
	CAP.	VOLT	Browning PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	MALLORY PART No.	SPRAGUE PART No.	
C1A	▲40	450		AFH2-57		BO45		FP238	TVL-2764	
B	■40	450								
C2	10	25		PRS25/10		BR102A		TC22	TVA-1204	
C3	10	25		PRS25/10		BR102A		TC22	TVA-1204	
C4	2	450		PRS450/4		BR245		TC70	TVA-1701	Note 1
C5	4700			BPD-0047	DD-502	TM5D5	811-005	DC-525	5HK-D47	
C6	4700			BPD-0047	DD-502	TM5D5	811-005	DC-525	5HK-D47	
C7	4700			BPD-0047	DD-502	TM5D5	811-005	DC-525	5HK-D47	
C8	4700			BPD-0047	DD-502	TM5D5	811-005	DC-525	5HK-D47	
C9	4700			BPD-0047	DD-502	TM5D5	811-005	DC-525	5HK-D47	
C10	33	500								
C11	4700			BPD-0047	DD-502	TM5D5	811-005	DC-525	5HK-D47	
C12	3.3			SI3.3NP0	TCZ-3.3		NP0K-3R3	ZT-5533	5TCCB-V33	
C13	4700			BPD-0047	DD-502	TM5D5	811-005	DC-525	5HK-D47	
C14	33	500								
C15	10						N220K-100			
C16	5			SI5N750	TCN-5		N750K-050	NT-555	5TCCB-V5	
C17	4700			BPD-0047	DD-502	TM5D5	811-005	DC-525	5HK-D47	
C18	10	500		1468-00001	D6-100	5W5Q1	GP1K-100		1FM-41	
C19	4700			BPD-0047	DD-502	TM5D5	811-005	DC-525	5HK-D47	
C20	100	500		1468-0001	D6-101	5W5T1	GP1K-101	MC235	1FM-31	
C21	4700			BPD-0047	DD-502	TM5D5	811-005	DC-525	5HK-D47	Note 2
C22	4700			BPD-0047	DD-502	TM5D5	811-005	DC-525	5HK-D47	
C23	4700			BPD-0047	DD-502	TM5D5	811-005	DC-525	5HK-D47	
C24	4700			BPD-0047	DD-502	TM5D5	811-005	DC-525	5HK-D47	
C25	4700			BPD-0047	DD-502	TM5D5	811-005	DC-525	5HK-D47	
C26	4700			BPD-0047	DD-502	TM5D5	811-006	DC-525	5HK-D47	
C27	4700			BPD-0047	DD-502	TM5D5	811-005	DC-525	5HK-D47	Note 2
C28	4700			BPD-0047	DD-502	TM5D5	811-005	DC-525	5HK-D47	
C29	4700			BPD-0047	DD-502	TM5D5	811-005	DC-525	5HK-D47	
C30	4700			BPD-0047	DD-502	TM5D5	811-005	DC-525	5HK-D47	
C31	4700			BPD-0047	DD-502	TM5D5	811-005	DC-525	5HK-D47	
C32	47	500		1468-00005	D6-470	5W5Q5	GP1K-470		1FM-45	
C33	4700			BPD-0047	DD-502	TM5D5	811-005	DC-525	5HK-D47	
C34	4700			BPD-0047	DD-502	TM5D5	811-005	DC-525	5HK-D47	
C35	4700			BPD-0047	DD-502	TM5D5	811-005	DC-525	5HK-D47	Note 2
C36	22			1468-00025	D6-220	5W5Q25	GP1K-220		1FM-325	
C37	47	500		1468-00005	D6-470	5W5Q5	GP1K-470		1FM-45	
C38	4700			BPD -0047	DD-502	TM5D5	811-005	DC-525	5HK-D47	Note 2
C39	4700			BPD-0047	DD-502	TM5D5	811-005	DC-525	5HK-D47	
C40	4700			BPD-0047	DD-502	TM5D5	811-005	DC-525	5HK-D47	
C41	47	500		1468-00005	D6-470	5W5Q5	GP1K-470		1FM-45	
C42	4700			BPD-0047	DD-502	TM5D5	811-005	DC-525	5HK-D47	
C43	620	500								
C44	.01	600		P688-01	D6-103	PTE6S1	GP2-333-103	PT611	6TM-S1	
C45	.047	600		P688-047	DF-503	PTE6S47		PT6147	6TM-S47	
C46	.1	400		P488-1	DF-104	PTE4P1		PT401	4TM-P1	
C47	4700			BPD-0047	DD-502	TM5D5	811-005	DC-525	5HK-D47	
C48	4700			BPD-0047	DD-502	TM5D5	811-005	DC-525	5HK-D47	Note 2

Note 1. Some Models use 4MFD in this application.
Note 2. Not used in all Models.

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

CONTROLS

ITEM No.	RATING		REPLACEMENT DATA					INSTALLATION NOTES
	RESISTANCE	WATTS	Browning PART No.	IRC PART No.	CLAROSTAT PART No.	CENTRALAB PART No.	MALLORY PART No.	
R1A	1Meg	1/2	BA012-056	Q13-137	AG-63-Z	B-70-S	U-53	Volume
B	Shaft		Not Req.	Not Req.	RS-2	Not Req.	Not Req.	Attach to R1A
C	Switch		Not Req.	76-1	SWB	Not Req.	US-26	Attach to R1A

RESISTORS

ITEM No.	RATING		REPLACEMENT DATA		NOTES
	OHMS	WATT	Browning PART No.	IRC PART No.	
R2	15Ω	1/2			
R3	220Ω	1/2		BTS-220	
R4	470KΩ	1/2		BTS-470K	
R5	10KΩ	1		BTA-10K	
R6	1500Ω 5%	1/2		BTS-1500 5%	
R7	10KΩ	1/2		BTS-10K	
R8	10KΩ	1		BTA-10K	
R9	2200Ω	1/2		BTS-2200	
R10	47Ω	1/2			
R11	390KΩ	1/2		BTS-390K	
R12	12KΩ	2		BTB-12K	
R13	15Ω	1/2			
R14	68Ω	1/2			
R15	27KΩ	1/2		BTS-27K	
R16	2200Ω	1/2		BTS-2200	
R17	68Ω	1/2			
R18	27KΩ	1/2		BTS-27K	
R19	2200Ω	1/2		BTS-2200	
R20	1Meg	1/2		BTS-1Meg	

ITEM No.	RATING		REPLACEMENT DATA		NOTES
	OHMS	WATT	Browning PART No.	IRC PART No.	
R21	1Meg	1/2		BTS-1Meg	
R22	56KΩ	1/2		BTS-56K	
R23	27KΩ	1/2		BTS-27K	
R24	100KΩ	1/2		BTS-100K	
R25	10KΩ	1/2		BTS-10K	
R26	27KΩ	1/2		BTS-27K	
R27	27KΩ	1/2		BTS-27K	
R28	100KΩ	1/2		BTS-100K	
R29	100KΩ	1/2		BTS-100K	
R30	100KΩ	1/2		BTS-100K	
R31	100KΩ	1/2		BTS-100K	
R32	75KΩ 5%	1/2		BTS-75K 5%	
R33	1Meg	1/2		BTS-1Meg	
R34	3300Ω	1/2		BTS-3300	
R35	10KΩ	1		BTA-10K	
R36	6800Ω	1/2		BTS-6800	
R37	100KΩ	1/2		BTS-100K	
R38	100KΩ	1/2		BTS-100K	
R39	1000Ω	10		1-3/4A-1000	

TRANSFORMER (POWER)

ITEM No.	RATING				REPLACEMENT DATA				
	PRI.	SEC. 1	SEC. 2	SEC. 3	Browning PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	TRIAD PART No.
T1	117VAC @ .8A	650VCT .071ADC	5VAC @ 2A	6.3VAC @ 3.34A		PC-8409	P-3151 ①	PV-70 ①	R-11A

① Drill new mounting holes.

COILS (RF-IF)

ITEM No.	USE	DC RES.		REPLACEMENT DATA				NOTES
		PRI.	SEC.	Browning PART No.	MERIT PART No.	MILLER PART No.	IRC Part No.	
L1	Ant. Coil	0Ω	0Ω					Secondary tapped
L2	RF Choke	.1Ω				4602	CLA	1 Microhenry
L3	RF Coil	0Ω						Tapped
L4	Osc. Coil	0Ω						Tapped
L5	1st. FM IF	1.2Ω	1.4Ω		FM-254	1463		
L6	2nd. FM IF	1.2Ω	1.4Ω		FM-254	1463		
L7	3rd. FM IF	1.2Ω	1.4Ω		FM-254	1463		
L8	Discriminator	1.4Ω	1.4ΩCT		FM-253	1464		

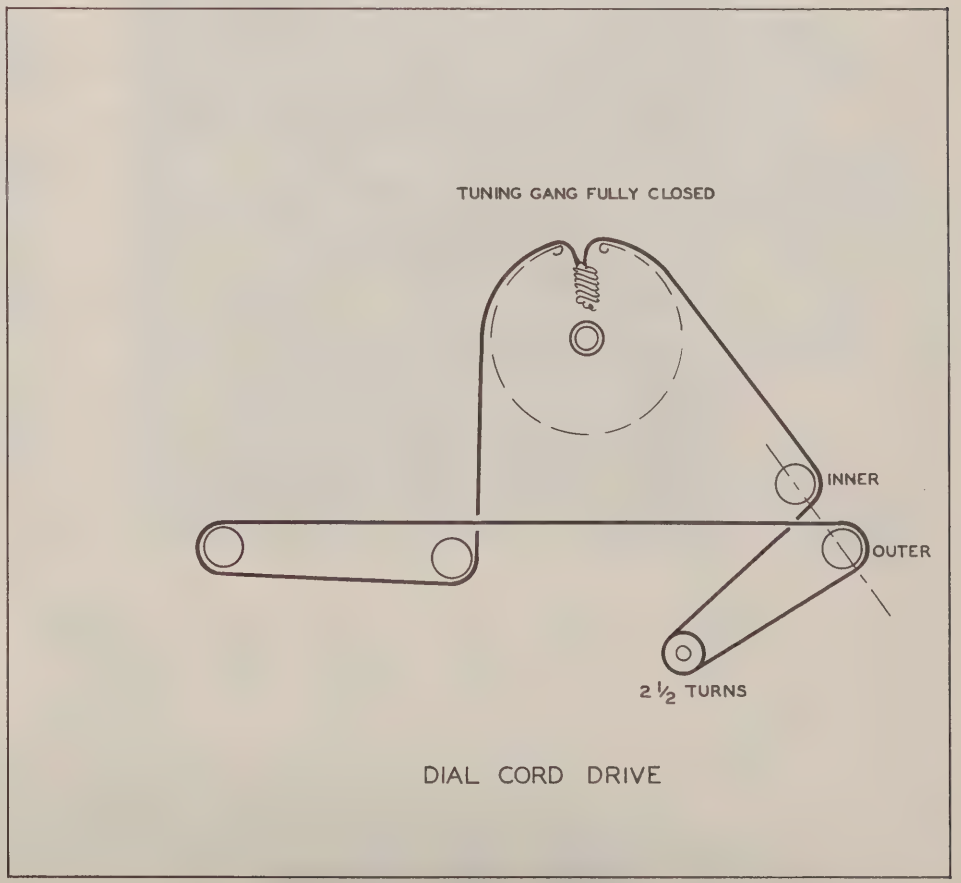
PARTS LIST AND DESCRIPTIONS (Continued)

DIAL LIGHTS

ITEM No.	BASE TYPE	VOLTS	AMPS.	BEAD COLOR	REPLACEMENT DATA		NOTES
					Browning PART No.		
M1	Bayonet	6-8	.15	Brown			Type #47
M2	Bayonet	6-8	.15	Brown			Type #47

MISCELLANEOUS

ITEM No.	PART NAME	Browning PART No.	NOTES
M3	Tuning Capacitor		
M4	Crystal	1N54	Bias Rectifier
M5	Switch		Function Selector Switch
M6	Switch		AFC On/Off



DIAL CORD DRIVE

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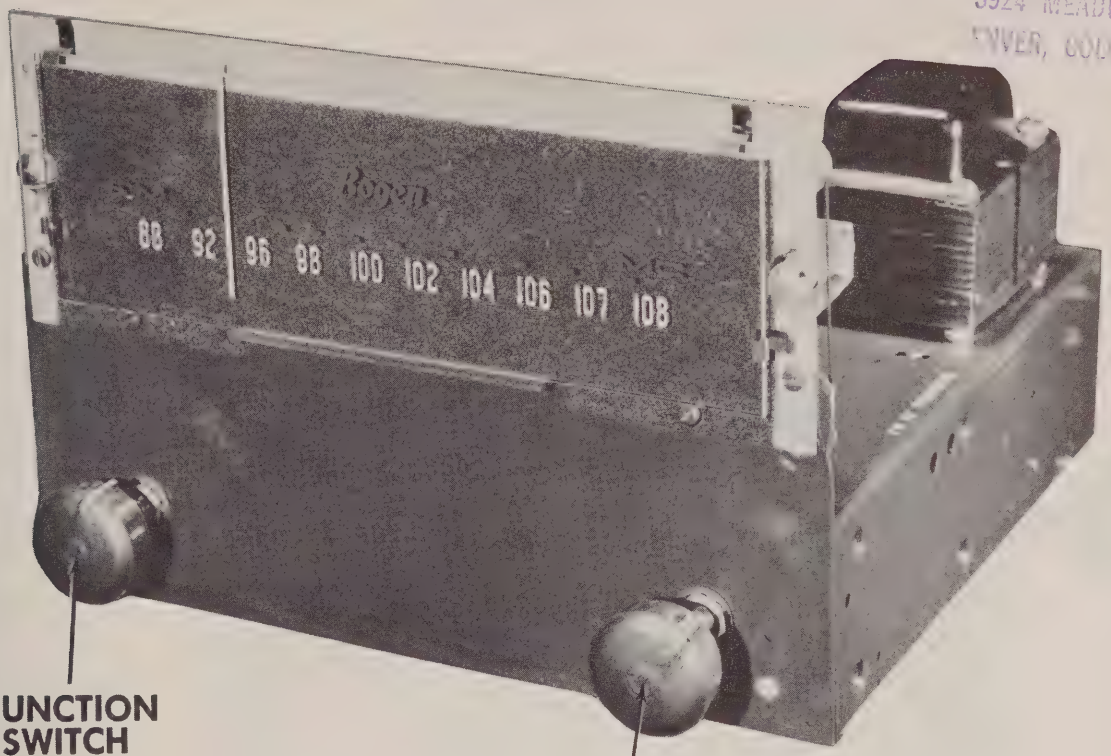
3924 MEADE ST
DENVER, COLORADO

DAVID BOGEN
MODEL FM801



DAVID BOGEN
MODEL FM801

TRADE NAME	David Bogen Model FM801
MANUFACTURER	David Bogen Co., Inc., 29 Ninth Ave., New York 14, N.Y.
TYPE SET	AC Operated FM Superheterodyne Tuner For Custom Installation
TUBES (Nine)	Types 6CB6 RF Amp., 6AB4 Mixer, 12AT7 Osc.-AFC, (2) 6AU6 IF Amp., 6AU6 Limiters, 6AL5 Disc., 6X4 Rectifier
POWER SUPPLY	110-120 Volts AC-60 Cycle
TUNING RANGE	Freq. Mod. 88-108MC RATING .40 Amp. @ 117 Volts AC

HOWARD W. SAMS & CO., INC. • Indianapolis 5, Indiana

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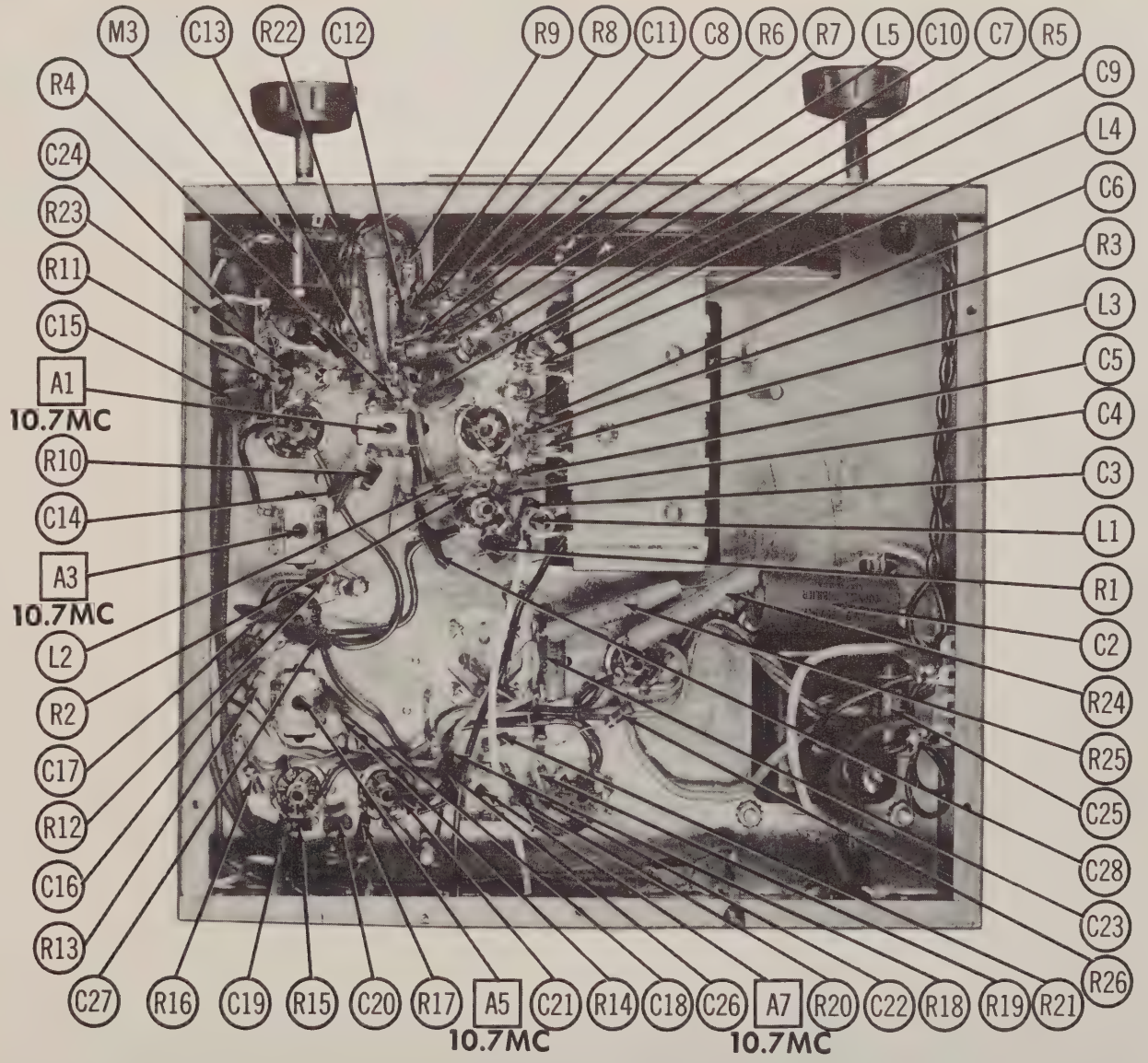


CHASSIS BOTTOM VIEW

PARTS LIST AND DESCRIPTIONS

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA		RTMA BASE TYPE	INSTALLATION NOTES
		David Bogen PART No.	STANDARD REPLACEMENT		
V1	RF Amplifier	6CB6	6CB6	7CM	
V2	Mixer	6AB4	6AB4	5CE	
V3	Oscillator AFC	12AT7	12AT7	9A	
V4	1st. IF Amplifier	6AU6	6AU6	7BK	
V5	2nd. IF Amplifier	6AU6	6AU6	7BK	
V6	1st. Limiter	6AU6	6AU6	7BK	
V7	2nd. Limiter	6AU6	6AU6	7BK	
V8	Discriminator	6AL5	6AL5	6BT	
V9	Rectifier	6X4	6X4	5BS	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING		REPLACEMENT DATA							NOTES
	CAP.	VOLT	David Bogen PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	MALLORY PART No.	SPRAGUE PART No.	
C1A	▲20	450		AFH2-69		B050		FP376.5	TVL-4760	
B	▲20	450								
C2	10	450		PRS450/10		BR1045A		TC72	TVA-1705	
C3	1000			SI1000	D6-102	TM5D1	GP2L-102	UC-521	5HK-D1	
C4	1000			SI1000	D6-102	TM5D1	GP2L-102	UC-521	5HK-D1	
C5	47			SI47	D6-470	TM5Q5	GP1K-470	UC-5447	5GA-Q47	
C6	1000			SI1000	D6-102	TM5D1	GP2L-102	UC-521	5HK-D1	
C7	10000			BPD-01	DD-103	TM5S1	821-01	DC-511	5HK-S1	
C8	1000			SI1000	D6-102	TM5D1	GP2L-102	UC-521	5HK-D1	
C9	100			SI100N750	TCN-100		N750L-101	NT-531	5TCU-T1	
C10	5			SI5N750	TCN-5		N750K-050	NT-555	5TCUB-V5	
C11	1000			SI1000	D6-102	TM5D1	GP2L-102	UC-521	5HK-D1	
C12	1000			SI1000	D6-102	TM5D1	GP2L-102	UC-521	5HK-D1	
C13	.05	400		P488-05	DF-503	PTE4S5		TP415	4TM-S5	
C14	10000			BPD-01	DD-103	TM5S1	821-01	DC-511	5HK-S1	
C15	10000			BPD-01	DD-103	TM5S1	821-01	DC-511	5HK-S1	
C16	10000			BPD-01	DD-103	TM5S1	821-01	DC-511	5HK-S1	
C17	10000			BPD-01	DD-103	TM5S1	821-01	DC-511	5HK-S1	
C18	47			SI47	D6-470	TM5Q5	GP1K-470	UC-5447	5GA-Q47	
C19	10000			BPD-01	DD-103	TM5S1	821-01	DC-511	5HK-S1	
C20	1000			SI1000	D6-102	TM5D1	GP2L-102	UC-521	5HK-D1	Note 1
C21	10000			BPD-01	DD-103	TM5S1	821-01	DC-511	5HK-S1	
C22	100			SI100	D6-101	TM5T1	GP1K-101	UC-531	5GA-T1	
C23	.001	400		P688-001	D6-102	PTE6D1	GP2L-102	PT621	6TM-D1	
C24	.05	600		P688-05	DF-503	PTE6S5		PT615	6TM-S5	
C25	.05	400		489ZX-05		PJ4S5		PT415	4TM-S5	
C26	10000			BPD-01	DD-103	TM5S1	821-01	DC-511	5HK-S1	Note 2
C27	10000			BPD-01	DD-103	TM5S1	821-01	DC-511	5HK-S1	Note 2
C28	10000			BPD-01	DD-103	TM5S1	821-01	DC-511	5HK-S1	

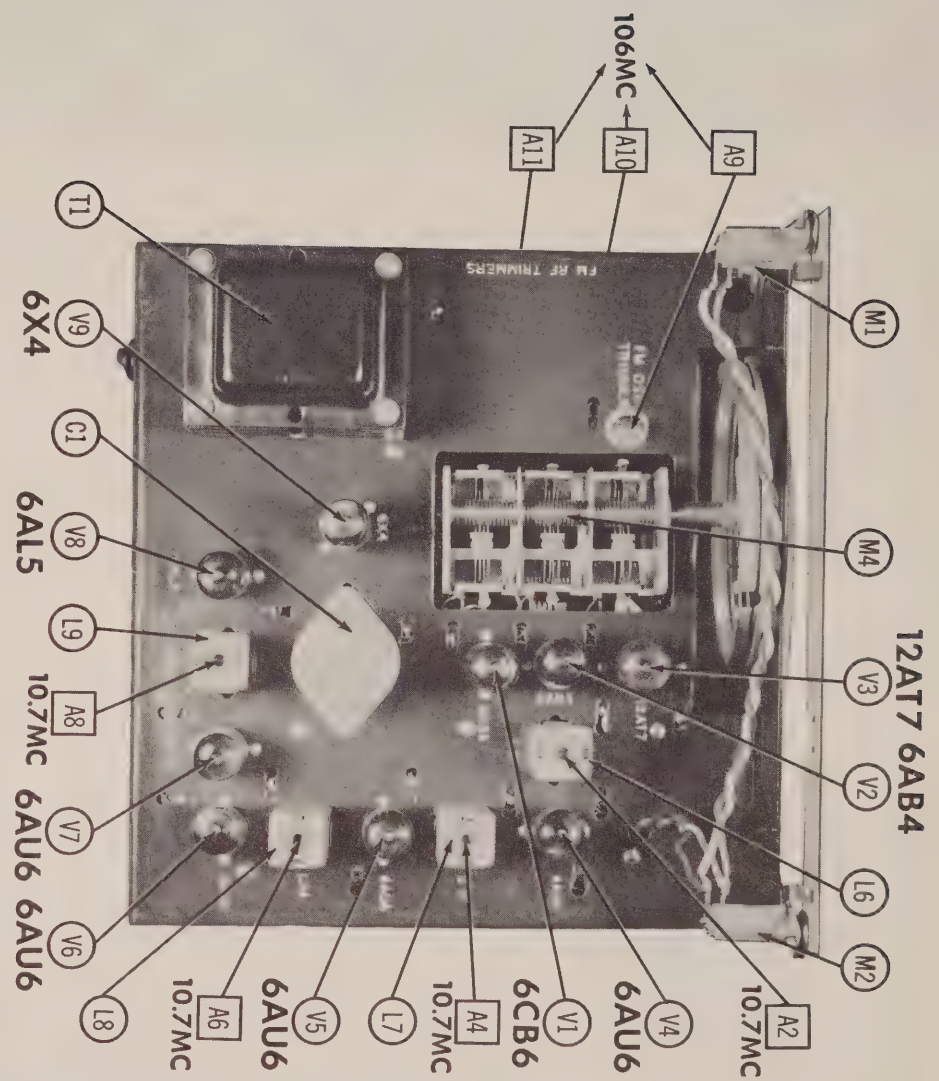
Note 1. Some models use 47MMF in this application.
Note 2. Not used in all models.

RESISTORS

ITEM No.	RATING		REPLACEMENT DATA		NOTES
	OHMS	WATT	David Bogen PART No.	IRC PART No.	
R1	1 Meg	½		BTS-1 Meg	Note 1
R2	1000Ω	½		BTS-1000	
R3	3.3 Meg	½		BTS-3.3Meg	
R4	1000Ω	½		BTS-1000	
R5	10KΩ	½		BTS-10K	
R6	1000Ω	½		BTS-1000	
R7	560Ω	½		BTS-560	
R8	220Ω	½			
R9	220KΩ	½		BTS-220K	Note 2
R10	1 Meg	½		BTS-1 Meg	Note 1
R11	1000Ω	½		BTS-1000	
R12	68Ω	½			
R13	1000Ω	½		BTS-1000	
R14	100KΩ	½		BTS-100K	
R15	10KΩ	½		BTS-10K	
R16	100KΩ	½		BTS-100K	
R17	47KΩ	½		BTS-47K	
R18	47KΩ	½		BTS-47K	
R19	22KΩ	½		BTS-22K	
R20	100KΩ	½		BTS-100K	
R21	100KΩ	½		BTS-100K	
R22	3.3Meg	½		BTS-3.3Meg	
R23	100KΩ	½		BTS-100K	
R24	1000Ω	7	R-1027	1 3/4A-1000	
R25	500Ω	7	R-5017	1 3/4A-500	
R26	68Ω	½			

Note 1. Some models use a 100KΩ resistor in this application.
Note 2. Some models use a 270KΩ resistor in this application.

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

COILS (RF-IF)

ITEM No.	USE	DC RES. PRI.	DC RES. SEC.	REPLACEMENT DATA David Bogen PART No.	REPLACEMENT DATA MERIT PART No.	REPLACEMENT DATA IRC PART No.	NOTES
L1	Ant. Coil	0Ω		U-402			Tapped
L2	RF Choke	.8Ω		U-501		CLA	1 Microhenery
L3	RF Coil	0Ω		U-401			Tapped
L4	Osc. Coil	0Ω		U-405			Tapped
L5	RF Choke	.8Ω		U-501		CLA	1 Microhenery
L6	1st. FM IF	.6Ω	.6Ω	H-294	FM-254		
L7	2nd. FM IF	.6Ω	.6Ω	H-355	FM-254		
L8	3rd. FM IF	.6Ω	.6Ω	H-355	FM-254		
L9	Discrimmator	.8Ω	.8Ω	H-295	FM-253		

TRANSFORMER (POWER)

ITEM No.	RATING PRI.	RATING SEC. 1	RATING SEC. 2	RATING SEC. 3	REPLACEMENT DATA David Bogen PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	TRIAD PART No.
T1	117VAC @ .40A	456VCT .062ADC	6.3VAC @ 3.3A		T-380	PM-8419	P-3047		

DIAL LIGHTS

ITEM No.	BASE TYPE	VOLTS	AMPS.	BEAD COLOR	REPLACEMENT DATA David Bogen PART No.		NOTES
M1	Bayonet	7.5	.2	White			Type No. 51
M2	Bayonet	7.5	.2	White			Type No. 51

MISCELLANEOUS

ITEM No.	PART NAME	David Bogen PART No.	NOTES
M3	Switch		Function-On/Off
M4	Tuning Capacitor		
A9	Trimmer		FM Osc.

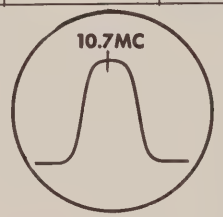


FIG.1

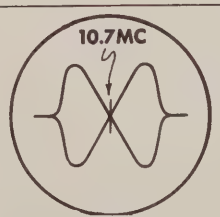


FIG.2

ALIGNMENT INSTRUCTIONS

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

To set pointer, turn tuning capacitor fully closed and set pointer last reference mark at low frequency end of dial.

IF ALIGNMENT USING AM SIGNAL GENERATOR AND VTVM

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	CONNECT VTVM	ADJUST	REMARKS
1.	.01MFD	High side to pin 6 (grid) of 6AB4(V2) Low side to chassis.	10.7MC (Unmod.)	FM	Any point of non-interference	DC probe to point Ⓐ Common to chassis.	A1, A2, A3, A4, A5, A6	Adjust for maximum deflection.
2.	"	"	"	"	"	DC probe to point Ⓑ Common to chassis.	A7	Adjust for maximum deflection. Keep generator output low to avoid limiting action of V6 & V7.
3.	"	"	"	"	"	DC probe to point Ⓒ Common to chassis.	A8	Adjust for a zero reading. A positive and negative reading will be obtained on either side of the correct setting.

IF ALIGNMENT USING FM SIGNAL GENERATOR AND OSCILLOSCOPE

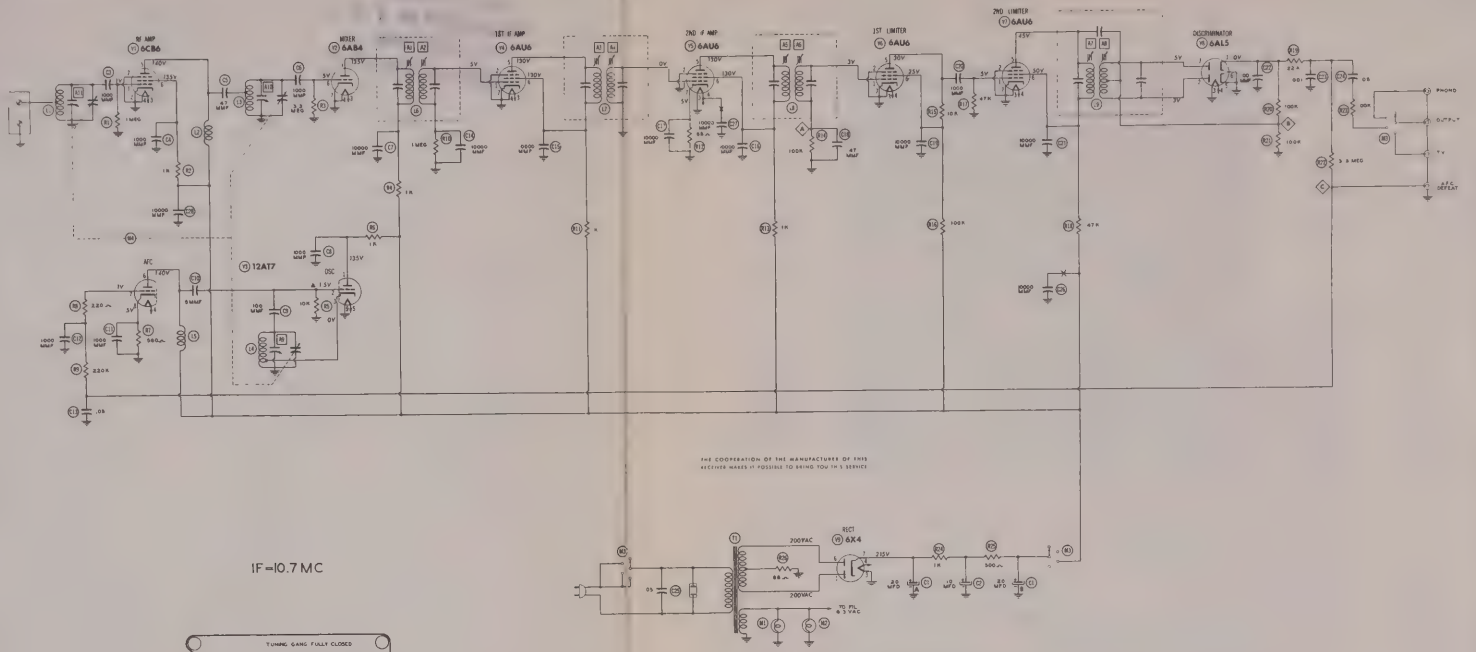
Use frequency modulated signal with 60∿ modulation and 450KC sweep. Use 120∿ sawtooth voltage in scope for horizontal deflection.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	SCOPE CONNECT	ADJUST	REMARKS
1.	.01MFD	High side to pin 6 (grid) of 6AB4 (V2) Low side to chassis.	10.7MC (450KC Swp.)	FM	Any point of non-interference	Vert. Amp. thru 47KΩ to point Ⓐ. Low side to chassis.	A1, A2, A3, A4, A5, A6	Adjust for curve of maximum amplitude and symmetry as in Fig. 1. Attenuate generator output to avoid distortion of response curve.
2.	"	"	"	"	"	Vert. Amp. to point Ⓑ thru 47KΩ. Low side to chassis.	A7	"
3.	"	"	"	"	"	Vert. Amp. to point Ⓒ Low side to chassis.	A8	Adjust so that 10.7MC occurs at center of crossover lines as in Fig. 2. SLIGHTLY re-touch A7 for maximum amplitude and straightness of crossover lines.

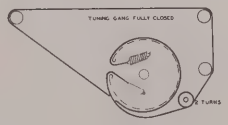
RF ALIGNMENT

Disable the AFC by shorting across the AFC Defeat jack.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	CONNECT VTVM	ADJUST	REMARKS
4.	270Ω Carbon Resistors	High side thru 270Ω to FM antenna terminals. Low side to ground terminal.	106MC (Unmod)	FM	106MC	DC probe to point Ⓐ Common to chassis.	A9, A10, A11	Adjust for maximum deflection.



1F=10.7 MC



DIAL CORD DRIVE

1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1,000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ± 10% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.

RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V 1	6CB6	1 Meg	0Ω	.1Ω	0Ω	†1.5KΩ	†2.5KΩ	0Ω		
V 2	6AB4	†2.5KΩ	0Ω	.1Ω	0Ω	0Ω	3.3Meg	0Ω		
V 3	12AT7	†2.5KΩ	10KΩ	0Ω	01Ω	.1Ω	†1.5KΩ	3.8Meg	560Ω	0Ω
V 4	6AU6	1 Meg	0Ω	.1Ω	0Ω	†2.5KΩ	†2.5KΩ	0Ω		
V 5	6AU6	.6Ω	0Ω	0 Ω	.1Ω	†2.5KΩ	†2.5KΩ	65Ω		
V 6	6AU6	100KΩ	0Ω	0Ω	.1Ω	†110KΩ	†100KΩ	0Ω		
V 7	6AU6	47KΩ	0Ω	0Ω	.1Ω	†48KΩ	†48KΩ	0Ω		
V 8	6AL5	200KΩ	100KΩ	0Ω	.1Ω	0Ω	0Ω	100KΩ		
V 9	6X4	175Ω	68Ω	0Ω	.1Ω	INF	175Ω	2 Meg		
V 10										

ALL MEASUREMENTS TAKEN IN FM POSITION ONLY
† MEASURED FROM PIN 7 OF V9
▲ TAKEN WITH VACUUM TUBE VOLTMETER

A PHOTOFACT STANDARD NOTATION SCHEMATIC
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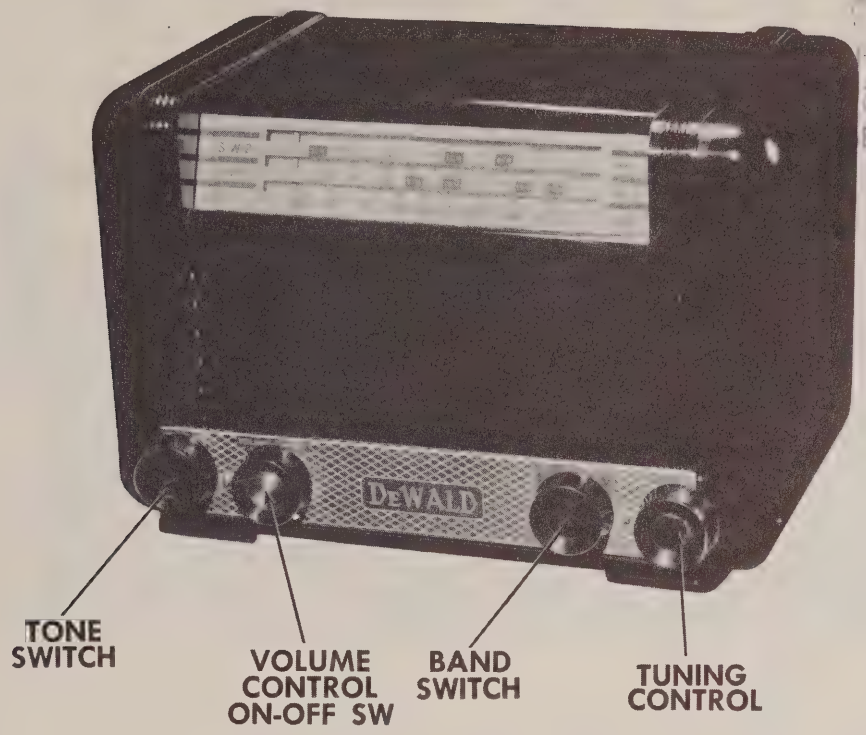

DEWALD
MODEL F405

TRADE NAME	Dewald Model F405
MANUFACTURER	Dewald Radio Mfg. Co. , 35-15 37th. Ave.,Long Island City, N.Y.
TYPE SET	Battery Operated 3 Band AM Superheterodyne Receiver
TUBES (Four)	Types 1R5 Conv., 1T4 IF Amp.,1U5 Det-AVC-AF Amp., 3V4 Audio Output
POWER SUPPLY	1.5 Volts "A" Supply & 90 Volts "B" Supply In Pack Form
RATING	250MA @ 1.5 Volts DC & 13MA @ 90 Volts DC
TUNING RANGE—BROADCAST	540-1620 KC SHORT WAVE 3.5-7.5 MC, 7.5-18MC

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

Turn tuning gang fully closed and set pointer to left hand index mark on dial back plate.
Loop should be maintained in same relative position to chassis as when receiver is in cabinet.
Volume control should be at maximum position. Output of signal generator should be no higher than necessary to obtain an output reading. Use an insulated alignment screwdriver for adjusting.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
1.	.1MFD	High side oto pin 6 (grid) of 1R5 (V1). Low side to chassis.	455KC (400~Mod)	BC	Tuning gang fully open.	Across voice coil.	A1, A2, A3, A4	Adjust for maximum output.
2.	"	"	1620KC	"	1620KC	"	A5	"
3.	"	"	600KC	"	To 600KC index mark on dial back plate.	"	A6	"
4.	Repeat steps 2 and 3 until 600 and 1620KC are tuned at proper dial position, ending with step 2.							
5.	.001MFD	High side to pin 6 (grid) of 1R5 (V1)Low side to chassis.	7.5MC	SW2	Tuning gang fully open.	Across voice coil.	A7	Adjust for maximum output
6.	"	"	19MC	SW1	"	"	A8	"
7.	470Ω Carbon Resistors	High side thru 470Ω to external antenna lead. Low side to ground lead.	17MC	"	Tune to 17MC signal.	"	A9	"
8.	"	"	6.5MC	SW2	Tune to 6.5 signal.	"	A10	"

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PARTS LIST AND DESCRIPTIONS

DEWALD MODEL F405

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA: DEWALD PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RTMA BASE TYPE	INSTALLATION NOTES
V1	Converter	1R5	1R5	7AT	
V2	IF Amplifier	1T4	1T4	6AR	
V3	Det-AVC-AF Amp.	1U5	1U5	6BW	
V4	Audio Output	3V4	3V4	6BX	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: DEWALD PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ERIE PART. No.	MALLORY PART No.	SPRAGUE PART No.	NOTES
C1	30	150		AFH1-16		A028		FP135	TVL-1408	
C2	750			SI750	D6-751		GP2K-751	UC-5375	5GA-T75	
C3	750			SI750	D6-751		GP2K-751	UC-5375	5GA-T75	
C4	100			SI100	D6-101	TM5T1	GP1K-101	UC-531	5GA-T1	
C5	.05	200		P288-05	DF-503	PJ2S5		PT415	2TM-S5	
C6	100	500		1468-0001	D6-101	5W5T1	GP1K-101	MC235	1FM-31	
C7	750			SI750	D6-751		GP2K-751	UC-5375	5GA-T75	
C8	100	500		1468-0001	D6-101	5W5T1	GP1K-101	MC235	1FM-31	
C9	820	500								
C10	20000			SI20000					5HK-S2	
C11	5000			BPD-005	DD-502	TM5D5	811-005	DC-525	5HK-D5	
C12	5000			BPD-005	DD-502	TM5D5	811-005	DC-525	5HK-D5	
C13	220			SI220	D6-221	5W5T25	GP2K-221	UC-5322	5GA-T22	
C14	1000			BPD-001	DD-102	TM5D1	801-001	DC-521	5HK-D1	
C15	220			SI220	D6-221	5W5T25	GP2K-221	UC-5322	5GA-T22	
C16	20000			SI20000					5HK-S2	
C17	10000			BPD-01	DD-103	TM5S1	821-01	DC-511	5HK-S1	
C18	1000			BPD-001	DD-102	TM5D1	801-001	DC-521	5HK-D1	
C19	.0025	600								
C20	.05	400		P488-05	DF-503	PTE4S5		PT415	4TM-S5	
C21	2				TCZ-2.2		NP0K-2R2		5TCCB-V22	

CONTROLS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: DEWALD PART No.	IRC PART No.	CLAROSTAT PART No.	CENTRALAB PART No.	MALLORY PART No.	INSTALLATION NOTES
R1A	1 Meg	½	3012-4	Q13-137	AG-63-Z	BSK-70-S	U-53	Volume
B	Shaft		Not Req.	Not Req.	KSS-3	Not Req.	Not Req.	Attach to R1A
C	Switch		Not Req.	76-2	SWB-2	Not Req.	US-27	Attach to R1A

RESISTORS

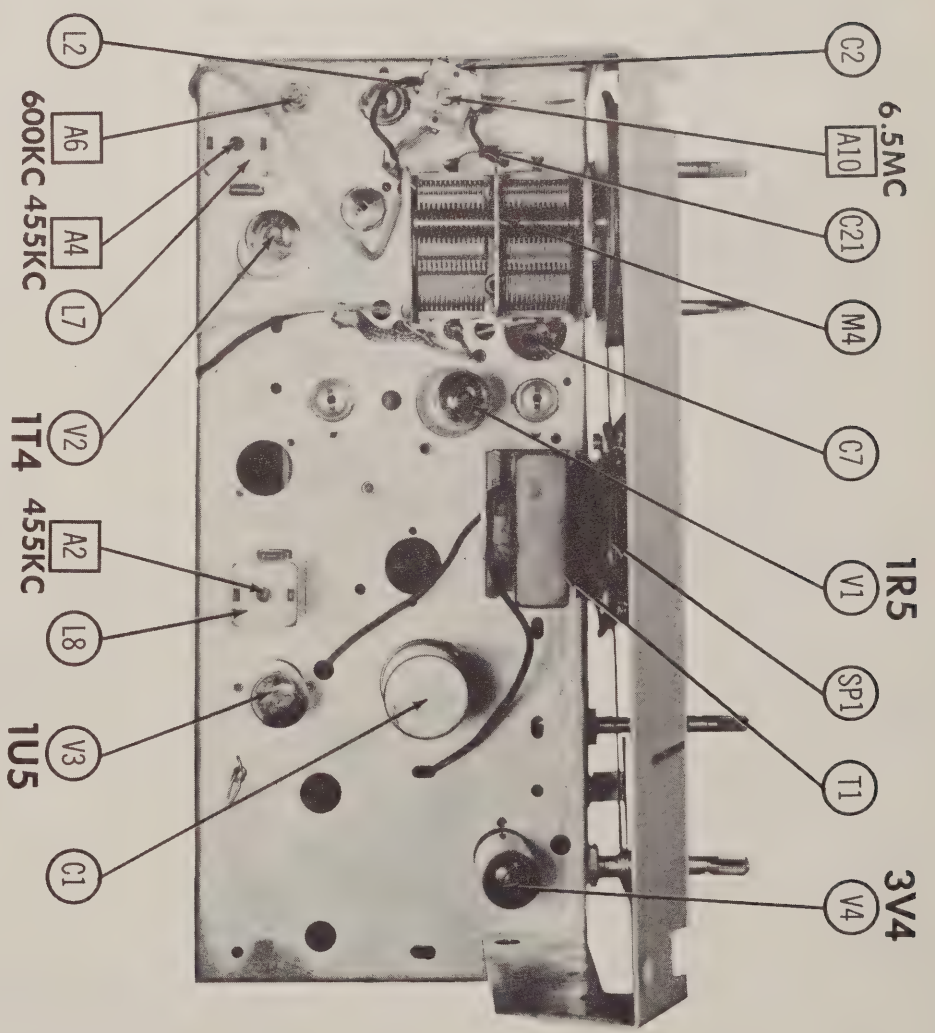
ITEM No.	RATING: OHMS	RATING: WATT	REPLACEMENT DATA: DEWALD PART No.	IRC PART No.	NOTES
R2	1 Meg	1/10 1/4 1/2 1 2		BTS-1 Meg	
R3	100KΩ			BTS-100K	
R4	10KΩ			BTS-10K	
R5	10Ω				
R6	3.3Meg			BTS-3.3Meg	
R7	3.3Meg			BTS-3.3Meg	

ITEM No.	RATING: OHMS	RATING: WATT	REPLACEMENT DATA: DEWALD PART No.	IRC PART No.	NOTES
R8	10 Meg	1/10 1/4 1/2 1 2		BTS-10 Meg	
R9	3.3Meg			BTS-3.3Meg	
R10	1 Meg			BTS-1 Meg	
R11	1 Meg			BTS-1 Meg	
R12	390Ω			BTS-390	

TRANSPORMER (AUDIO OUTPUT)

ITEM No.	RATING: IMPEDANCE PRI.	RATING: IMPEDANCE SEC.	RATING: DC RES. PRI.	RATING: DC RES. SEC.	REPLACEMENT DATA: DEWALD PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	TRIAD PART No.	NOTES
T1	9.4KΩ	3.2Ω	580Ω	.58Ω	1117-3	A-3879 ①	A-2932 ①	RO-16 ①	S-11X ①	① Bend mtg. tabs down, file out slots and mount on original mounting bracket.

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

SPEAKER

ITEM No.	RATINGS			REPLACEMENT DATA			NOTES
	SIZE	FIELD	V. C. IMP.	DEWALD PART No.	JENSEN PART No.	QUAM PART No.	
SP1	5"	PM	3.2Ω	7030-1	ST-105 Mod P5-X	5A07	

COILS (RF-IF)

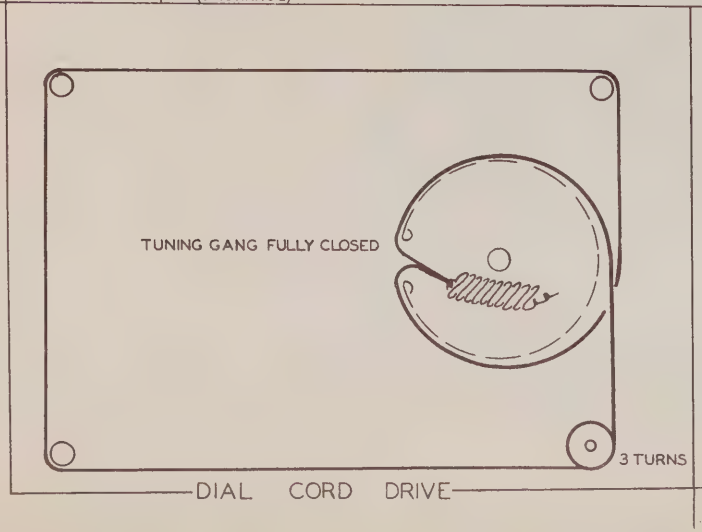
ITEM No.	USE	DC RES.		REPLACEMENT DATA			NOTES
		PRI.	SEC.	DEWALD PART No.	MERIT PART No.		
L1	BC Loop Ant.	.2Ω	2.6Ω				
L2	SW Ant. Coil	.4Ω	.2Ω				SW 2 Band: 3.5-7MC SW 1 Band: 7.5-17MC
L3	SW Ant. Coil	.2Ω	.1Ω				
L4	BC Osc. Coil	1.2Ω	4.8Ω				
L5	SW Osc. Coil	.4Ω	.2Ω				SW 2 Band:3.5-7MC SW 1 Band:7.5-17MC
L6	SW Osc. Coil	.1Ω	0Ω				
L7	Input IF	24Ω	24Ω		BC-352		
L8	Output IF	25Ω	24Ω		BC-353		

BATTERIES

ITEM No.	VOLTAGE	DEWALD PART No.	REPLACEMENT DATA						INSTALLATION NOTES
			EVEREADY			BURGESS			
			"A"	"B"	"A-B"	"A"	"B"	"A-B"	
M1	1.5V "A" & 90V "B"				759			6TA60	

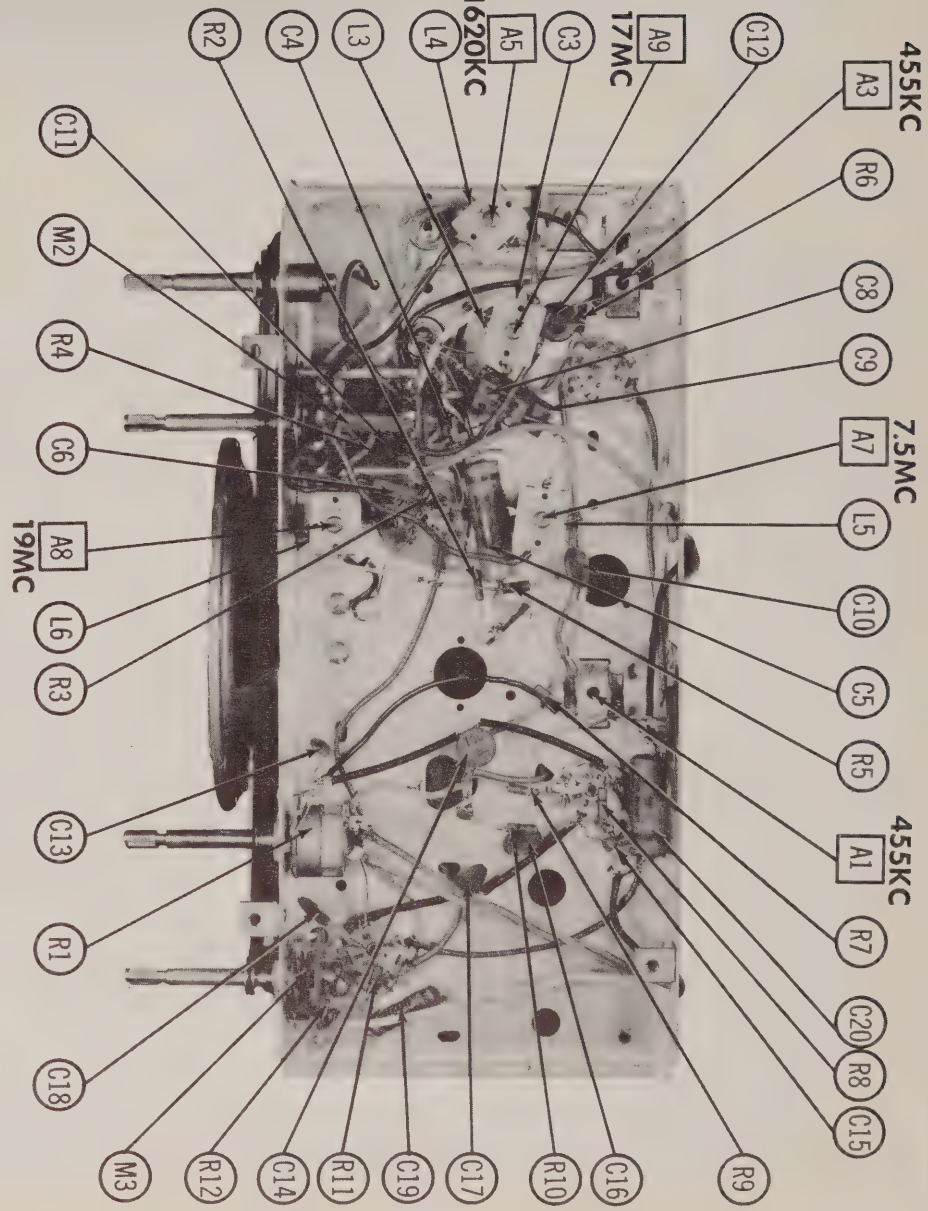
MISCELLANEOUS

ITEM No.	PART NAME	DEWALD PART No.	NOTES
M2	Switch		Band Switch
M3	Switch		Tone
M4	Tuning Capacitor		20-433MMF, 20-433MMF
A5	Trimmer		Oscillator (Broadcast)
A6	Padder		Oscillator (Broadcast)
A7	Trimmer		Oscillator (Shortwave 2)
A8	Trimmer		Oscillator (Shortwave 1)
A9	Trimmer		RF (Shortwave 1)
A10	Trimmer		RF (Shortwave 2)

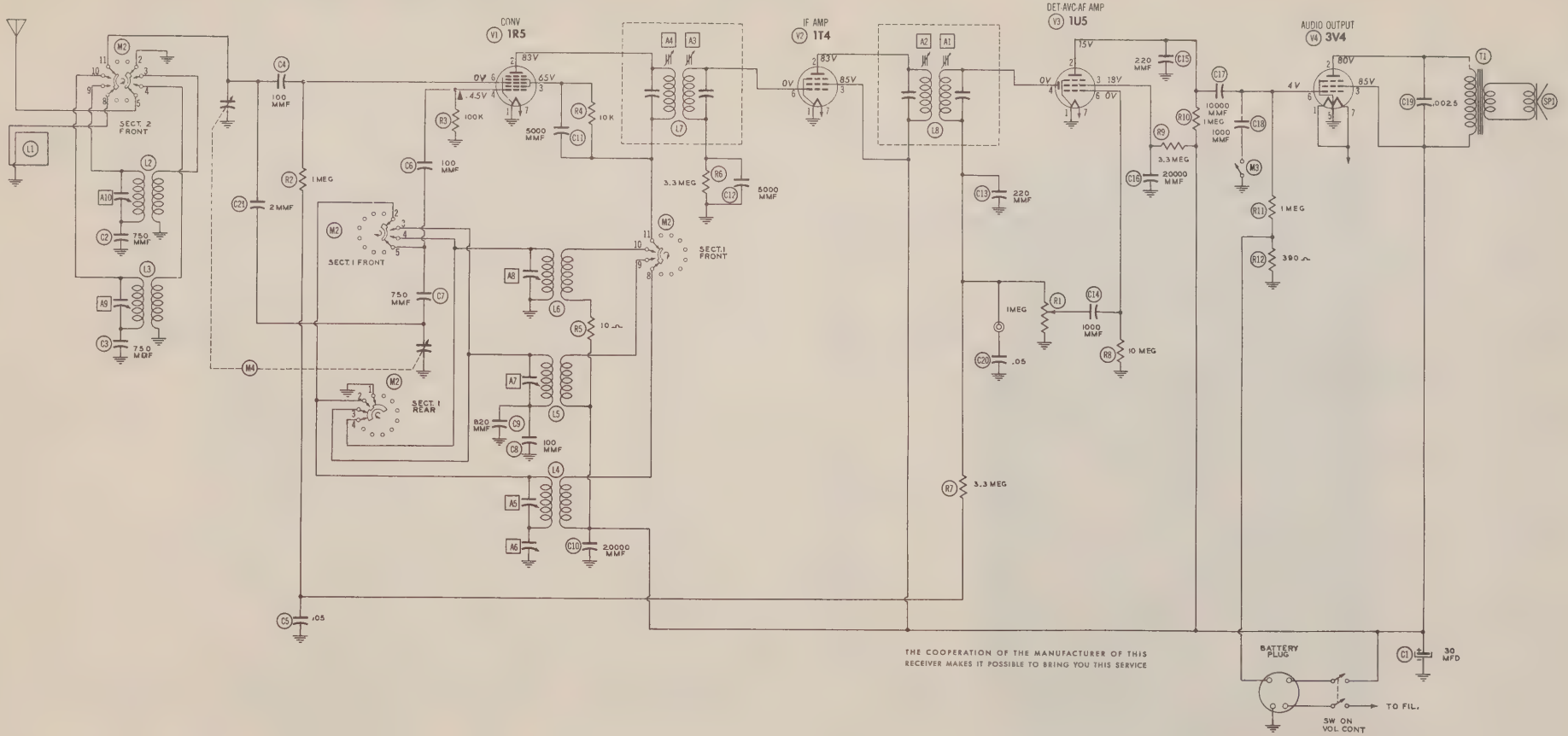


DEWALD MODEL P405

CHASSIS—BOTTOM VIEW



DEWALD MODEL F405



IF = 455 KC

RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7
V 1	1R5	0Ω	†34Ω	†10KΩ	100KΩ	0Ω	5.3Meg	*
V 2	1T4	0Ω	†25Ω	†0Ω	INF	0Ω	3.3Meg	*
V 3	1U5	0Ω	†1Meg	†3.3Meg	1 Meg	INF	10 Meg	*
V 4	3V4	*	†580Ω	5Meg	INF	0Ω	1 Meg	*

ALL MEASUREMENTS TAKEN IN BROADCAST POSITION
▲ TAKEN IN VACUUM TUBE VOLTMETER
† MEASURED FROM PIN #3 OF V4
* DO NOT USE OHMMETER TO MEASURE FILAMENT RESISTANCE

A PHOTOFACT STANDARD NOTATION SCHEMATIC
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1 - DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1000 ohms per volt.
2 - Socket connections are shown as bottom views.
3 - Measured values are from socket pin to common negative.
4 - Nominal tolerance on component values makes possible a variation of ± 15% in voltage and resistance readings.
5 - Volume control at maximum, no signal applied for voltage measurements.

PHOTOFACT* Folder

*TRADE MARK

FIRESTONE
MODELS 13-G-114, A, 13-G-117

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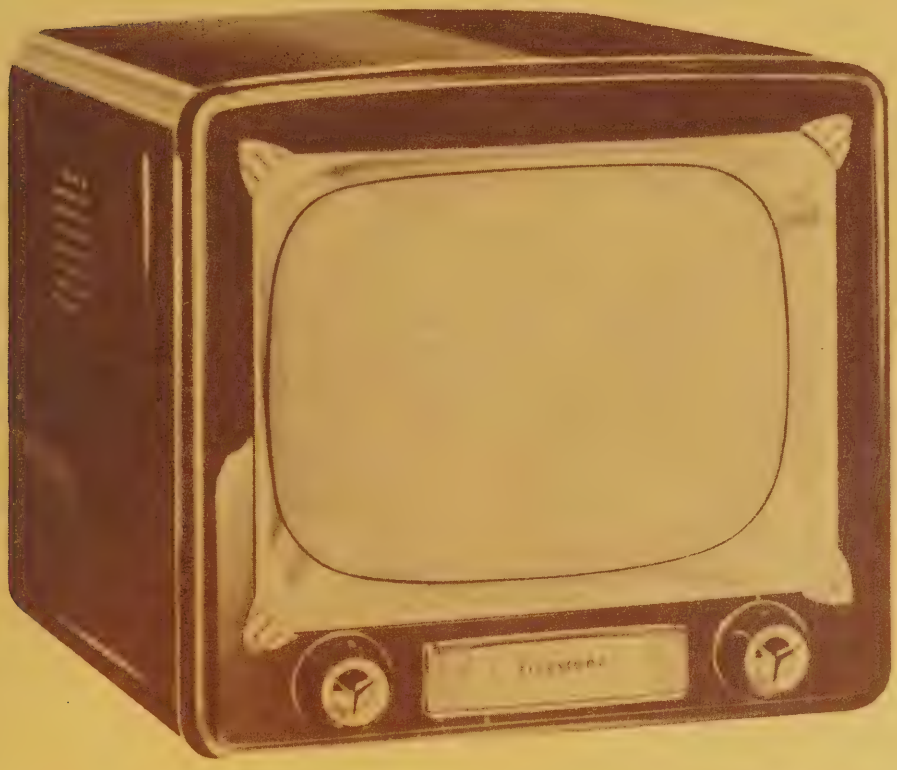

FIRESTONE
MODELS 13-G-114, A, 13-G-117

MODEL 13-G-114

HOWARD W. SAMS & CO., INC. • Indianapolis 5, Indiana

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FIRESTONE
MODELS 13-G-114, A, 13-G-117

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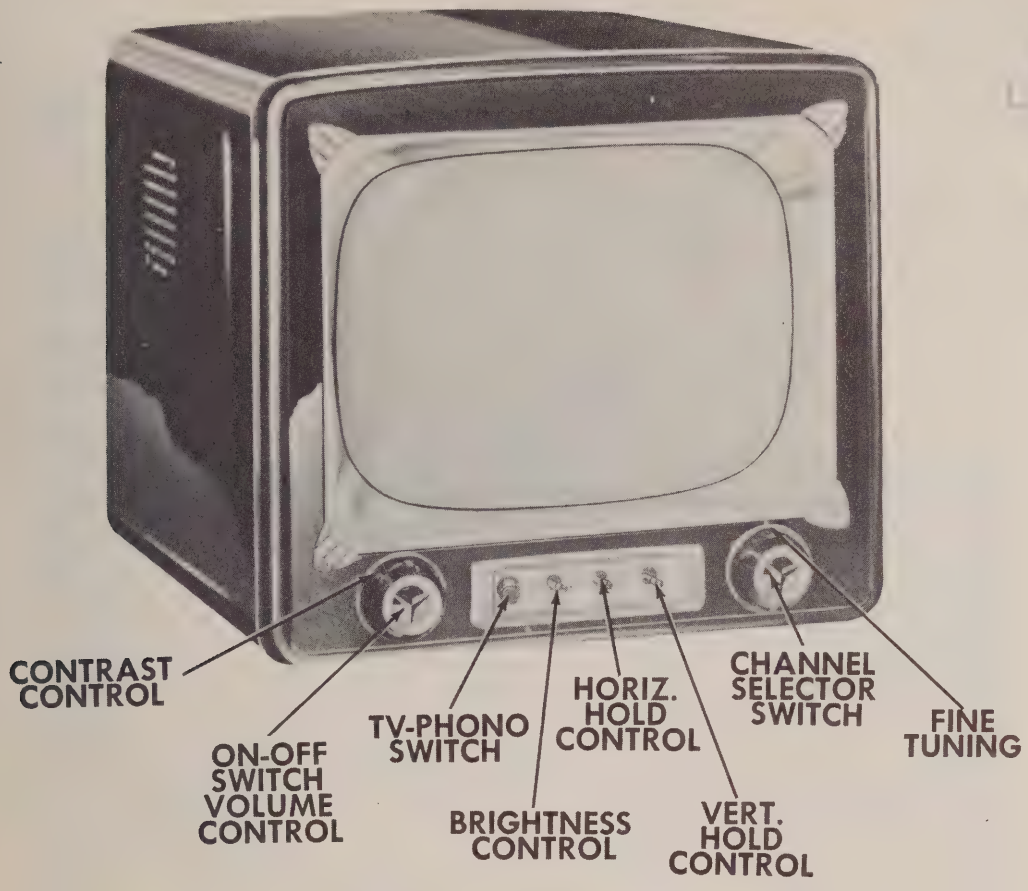

FIRESTONE 13-G-114A

TRADE NAME	Firestone Models 13-G-114, 13-G-114A, 13-G-117 (Ch. 817).
MANUFACTURER	Firestone Tire & Rubber Co., 1200 Firestone Parkway, Akron, Ohio
TYPE SET	Television Receiver
TUBES	Twenty-One
POWER SUPPLY	110-120 Volts AC - 60 Cycle — RATING 1.9 Amp. @ 117 Volts AC
TUNING RANGE—	Channels 2 thru 13, Video IF 25.75MC, Sound IF 21.25MC (Intercarrier)

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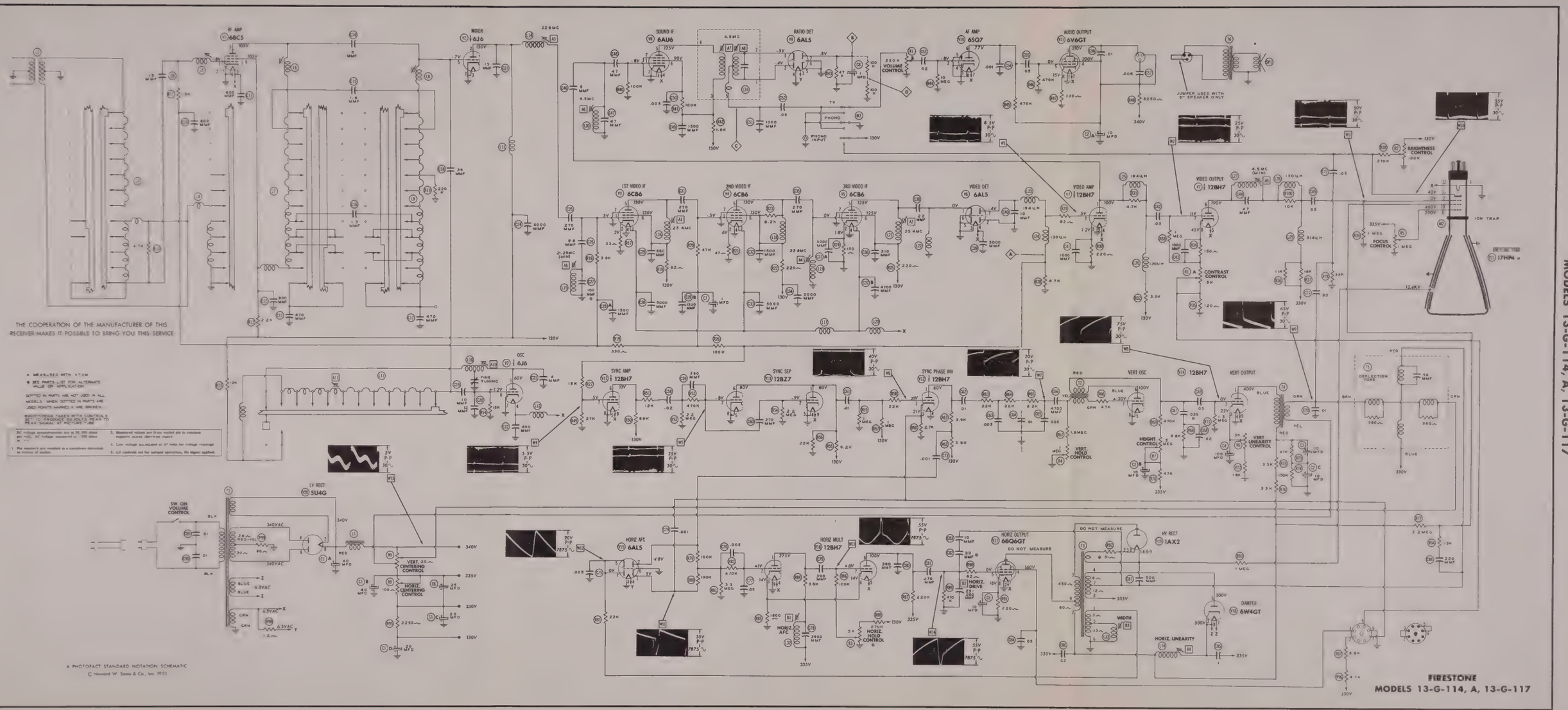
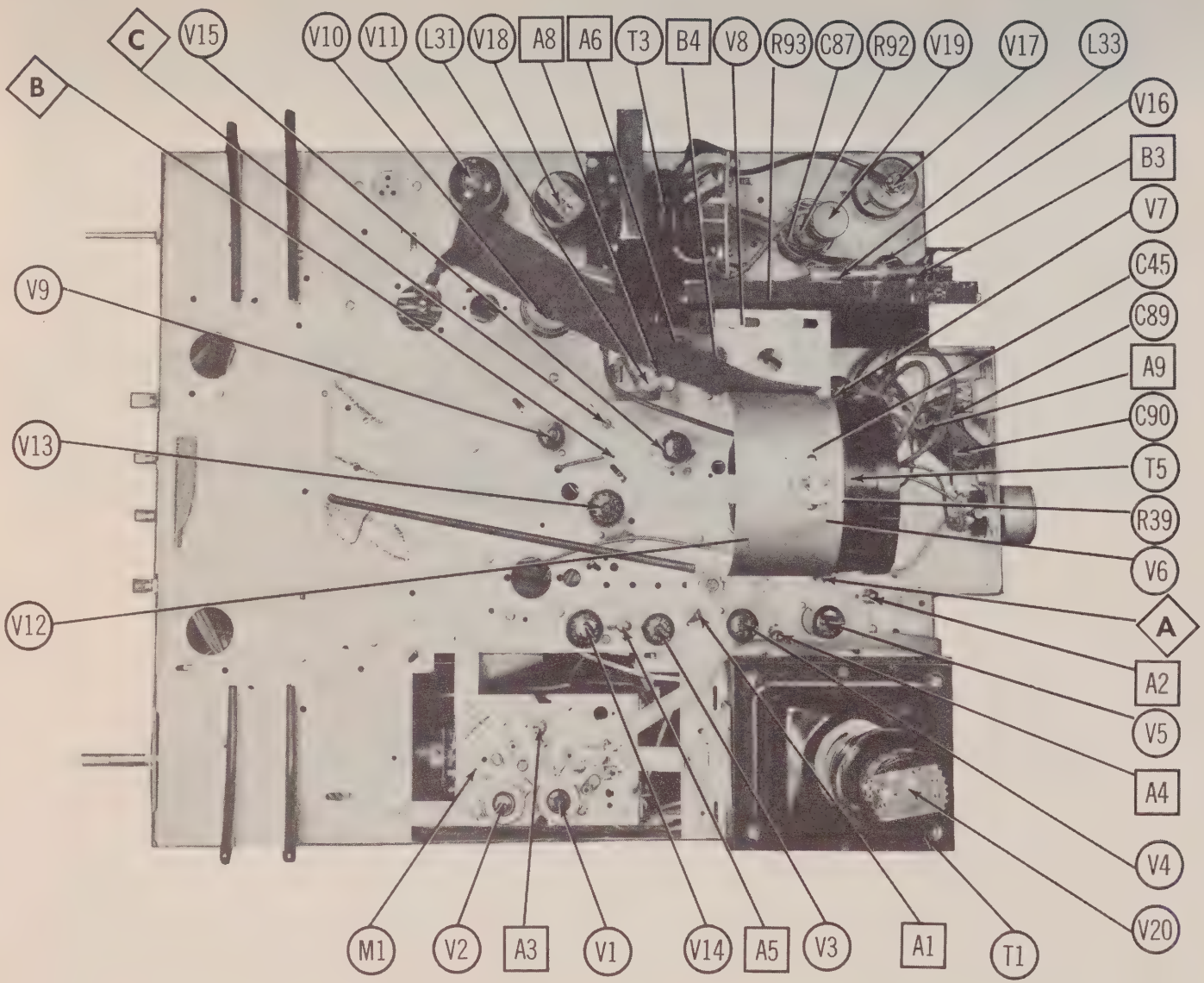
FIRESTONE
MODELS 13-G-114, A, 13-G-117


THE COOPERATION OF THE MANUFACTURER OF THIS RECEIVER MAKES IT POSSIBLE TO BRING YOU THIS SERVICE
A PHOTOFACT STANDARD NOTATION SCHEMATIC
C Howard W Sams & Co., Inc. 1953
FIRESTONE
MODELS 13-G-114, A, 13-G-117

FIRESTONE
MODELS 13-G-114, A, 13-G-117



CHASSIS TOP VIEW

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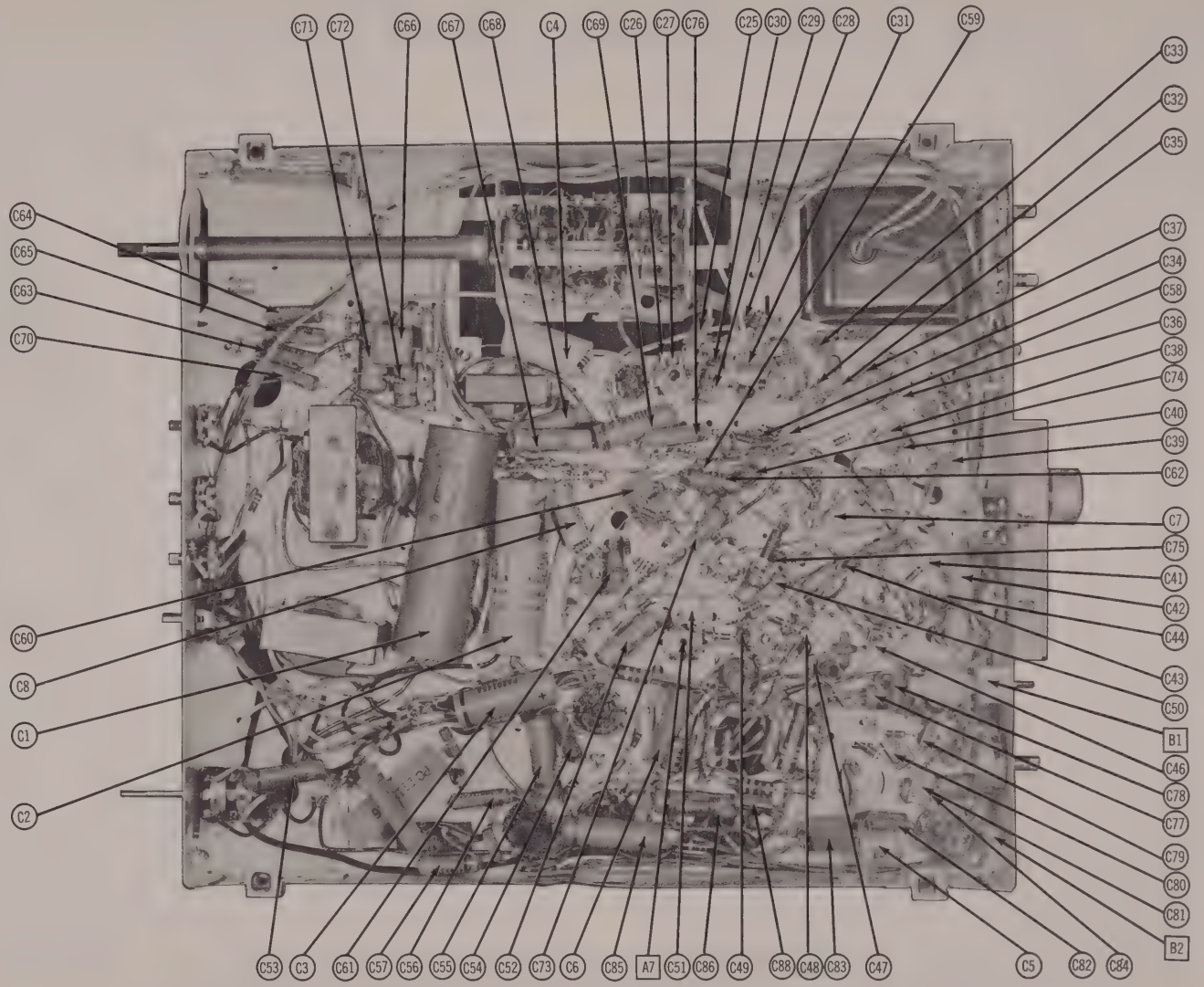
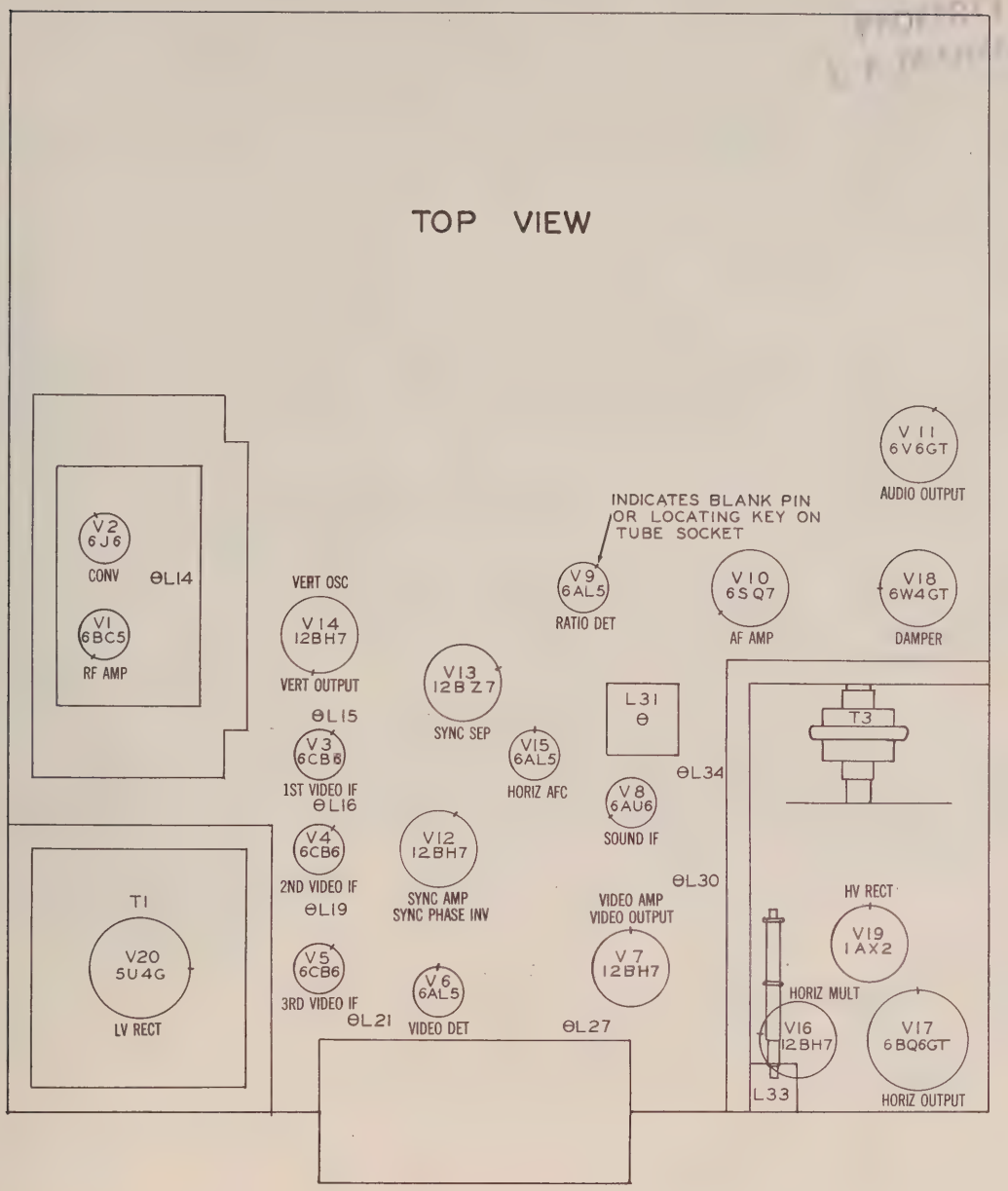


CHASSIS BOTTOM VIEW-CAPACITOR AND ALIGNMENT IDENTIFICATION

TUBE PLACEMENT CHART



TUBE FAILURE CHECK CHART

The following chart lists tubes whose failures are most likely to produce the indicated symptoms. Refer to tube placement chart for location and type of tube.

POWER SUPPLY FAILURE
No raster, no sound-V20

LOSS OF PICTURE OR SOUND
No pic, no sound, has raster-V2, V3, V4, V5, V6
No pic, no sound, has snow-V1, V2, V3
No pic, has sound, has raster-V7, V21
Has pic, no sound -V8, V9, V10, V11

SYNC FAILURE
No vert. sync.-V12, V14
No horiz. sync-V12, V15, V16
No vert. or horiz. sync-V12, V13

SWEEP FAILURE
No raster, has sound-V16, V17, V18, V19, V21
No vertical deflection-V14
Poor vert. linearity or foldover-V14
Poor horiz. linearity or foldover-V16, V17, V18
Narrow picture-V16, V17, V18, V19, V20
Vert off freq.-V12, V14
Horiz. off freq.-V12, V15, V16

ALIGNMENT INSTRUCTIONS

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

The high voltage shock hazard can be eliminated by removing the horizontal multivibrator tube (V16).

VIDEO IF ALIGNMENT

Remove the converter tube (V2) from its socket and replace with a 6J6 which has pin 1 removed. This will disable the local oscillator and reduce the possibility of erroneous indications.
Connect the negative lead of a 3 volt battery to the ungrounded side of C7. Connect the positive lead to chassis.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT VTVM	ADJUST	REMARKS
1.	Direct	High side to an ungrounded tube shield floating over dummy converter tube. Low side to chassis.	25.4MC (Unmod)	Any	DC probe to point ◇A◇ Common to chassis.	A1, A2	Adjust for maximum deflection.
2.	"	"	22.8MC	"	"	A3, A4	"
3.	"	"	21.75MC	"	"	A5	Adjust for MINIMUM deflection.

OVERALL VIDEO IF RESPONSE CHECK

Connect the synchronized sweep voltage from the signal generator to the horizontal input of the oscilloscope for horizontal deflection.

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
4.	Direct	High side to an grounded tube shield floating over dummy converter tube. Low side to chassis.	24MC (10MC Swp)	21.25MC 25.75MC	Any	Vert amp to point ◇A◇ Low side to chassis.		Check for response curve similar to fig. 1. If necessary retouch A1 thru A4 for desired response.

SOUND IF ALIGNMENT USING AM SIGNAL GENERATOR AND VTVM

Connect two matched 100KΩ (±1%) resistors in series from point ◇B◇ to chassis. The junction of these two resistors is alignment point ◇D◇ as shown on schematic.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT VTVM	ADJUST	REMARKS
5.	.001MFD	High side to pin 2 (grid) of 12BH7 (V7). Low side to chassis.	4.5MC (Unmod)	Any	DC probe to point ◇B◇ Common to chassis.	A6, A7	Adjust for maximum deflection.
6.	"	"	"	"	DC probe to point ◇C◇ Common to point ◇D◇	A8	Adjust for zero reading. A positive and negative reading will be obtained on either side of the correct setting.

SOUND IF ALIGNMENT USING FM SIGNAL GENERATOR AND OSCILLOSCOPE

Use frequency modulated signal with 60∿ modulation and 450KC sweep. Use 120∿ sawtooth voltage in scope for horizontal deflection.

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
5.	.001MFD	High side to pin 2 (grid) of 12BH7 (V7). Low side to chassis.	4.5MC (450KC Swp)	4.5MC	Any	Vert. amp to point ◇B◇ Low side to chassis.	A6, A7	Disconnect stabilizer capacitor C8. Adjust for curve of maximum amplitude and symmetry as in fig. 2.
6.	"	"	"	"	"	Vert. amp to point ◇C◇ Low side to chassis.	A8	Reconnect capacitor C8. Adjust so that 4.5MC occurs at center of crossover lines as in fig. 3. SLIGHTLY retouch A7 for maximum amplitude and straightness of crossover lines.

4.5MC TRAP ALIGNMENT

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT VTVM	ADJUST	REMARKS
7.	27KΩ	High side to pin 2 (grid) of picture tube. Low side to chassis.	4.5MC (Unmod)	Any	DC probe to point ◇B◇ Common to chassis.	A9	Adjust for MINIMUM deflection.

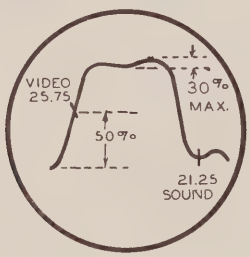


FIG. 1

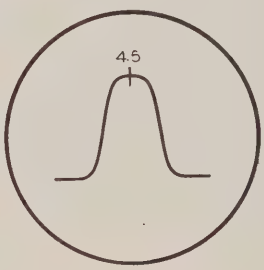


FIG. 2

ALIGNMENT INSTRUCTIONS (CONT.)

OSCILLATOR ALIGNMENT

Remove dummy converter tube and replace original 6J6 in its socket.
Connect the synchronized sweep voltage from the signal generator to the horizontal input of the oscilloscope for horizontal deflection.
The sweep generator output lead should be terminated with its characteristic impedance, usually 50 ohms.
Set the fine tuning control to the mid-position of its range.

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
8.	Two 120Ω carbon resistors.	Across antenna terminals with 120Ω in each lead.	213MC (10MC Swp.)	211.25MC 215.75MC	13	Vert. amp. to point (A). Low side to chassis.	A10	Adjust to place sound marker in trap notch as in fig. 4. Video marker should be at 50%.
9.	"	"	207MC (10MC Swp.)	205.25MC 209.75MC	12	"		Check for marker placement as shown in fig. 4. Retouch A10, if necessary, to bring any individual channel within range of fine tuning control then re-check all other high bank channels to see that they have not been seriously affected.
			201MC (10MC Swp.)	199.25MC 203.75MC	11			
			195MC (10MC Swp.)	193.25MC 197.75MC	10			
			189MC (10MC Swp.)	187.25MC 191.75MC	9			
			183MC (10MC Swp.)	181.25MC 185.75MC	8			
			177MC (10MC Swp.)	175.25MC 179.75MC	7			
10.	"	"	85MC (10MC Swp.)	83.25MC 87.75MC	6	"	A11	Adjust to place sound marker in trap notch as in fig. 4. Video marker should be at 50%.
11.	"	"	79MC (10MC Swp.)	77.25MC 81.75MC	5	"		Check for marker placement as shown in fig. 4. Retouch A11 if necessary, to bring any individual channel within range of fine tuning control then re-check all other low band channels to see that they have not been seriously affected.
			69MC (10MC Swp.)	67.25MC 71.75MC	4			
			63MC (10MC Swp.)	61.25MC 65.75MC	3			
			57MC (10MC Swp.)	55.25MC 59.75MC	2			

RF ALIGNMENT

The RF section of this tuner has been properly aligned at the factory and is very stable.
Alignment of this portion should not be required in the field.

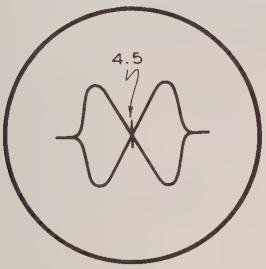


FIG. 3

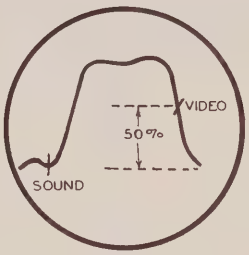
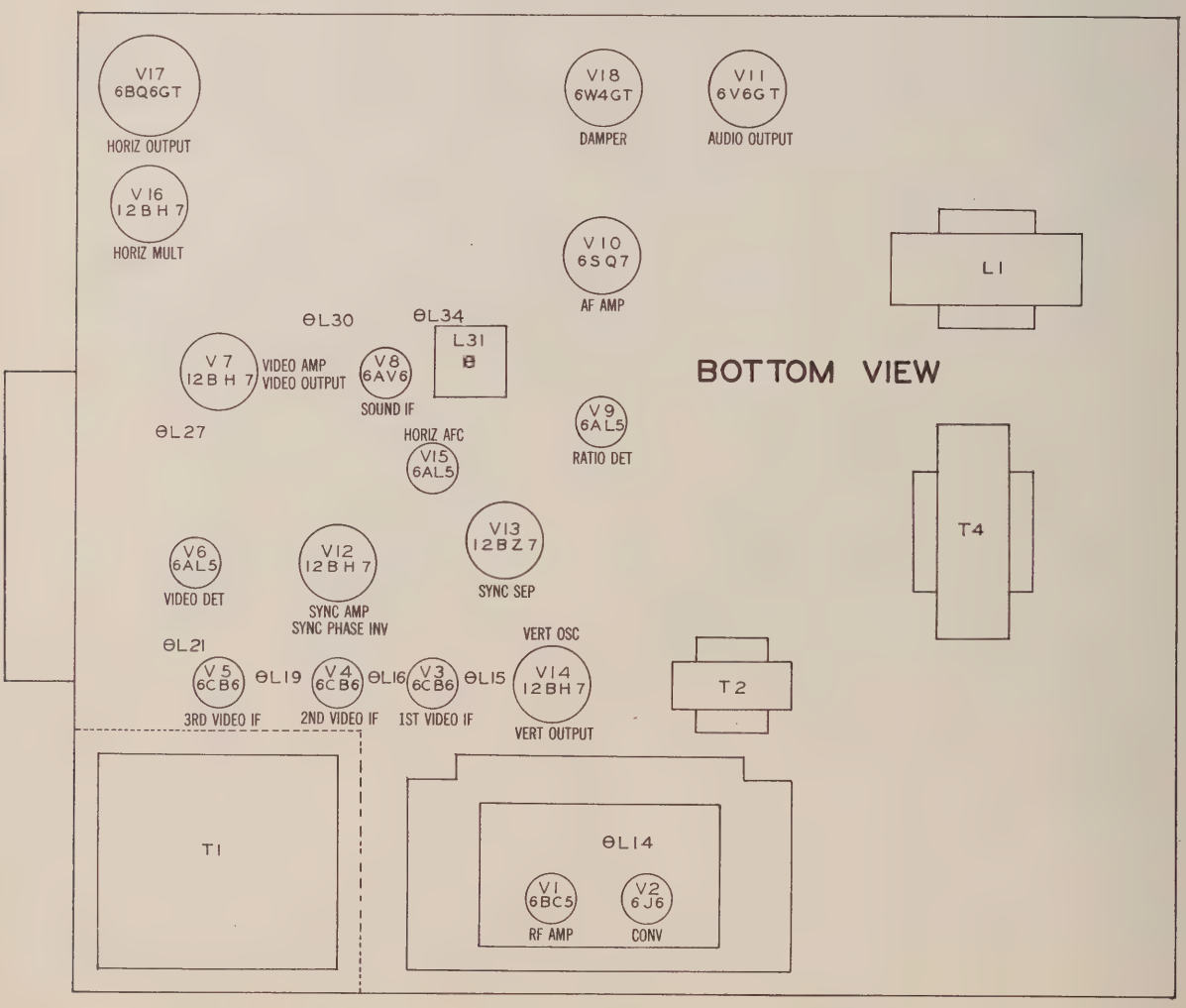


FIG. 4

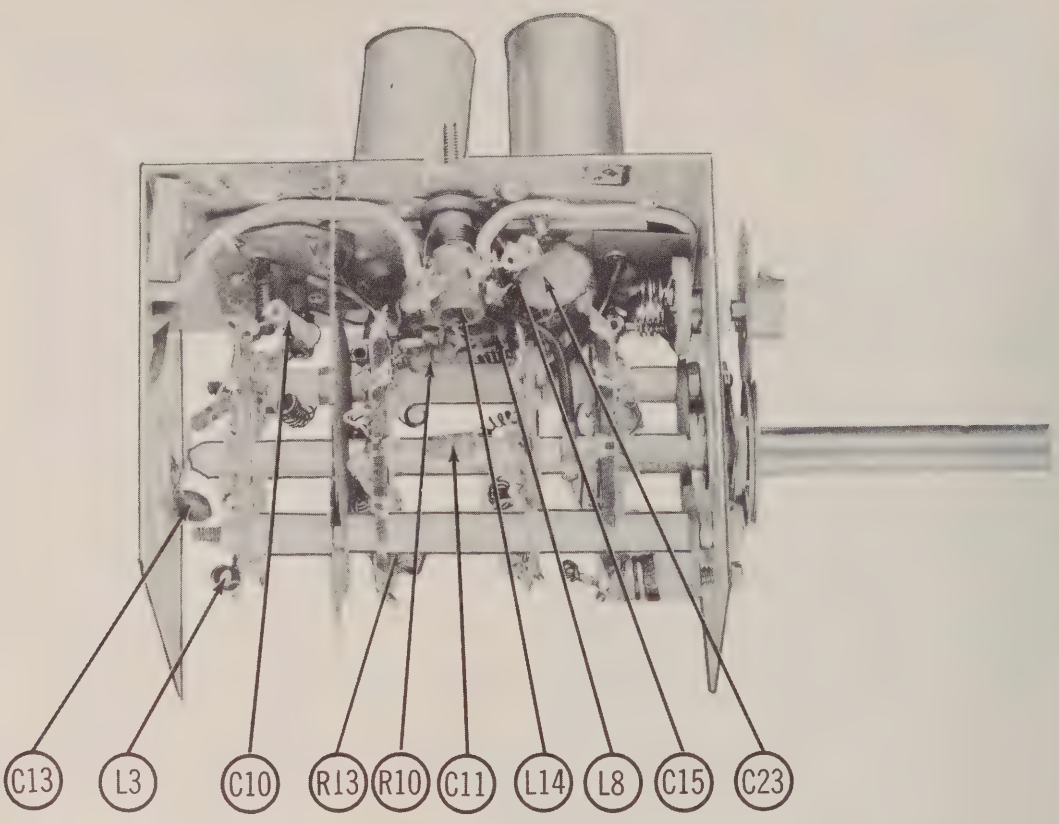
RESISTANCE MEASUREMENTS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V 1	6BC5	120KΩ	0Ω	.1Ω	0Ω	†4.5KΩ	†4.5KΩ	0Ω		
V 2	6J6	†12.3KΩ	†2.3KΩ	0Ω	.1Ω	220KΩ	15KΩ	0Ω		
V 3	6CB6	107KΩ	33Ω	.64Ω	0Ω	†2.4KΩ	†2.4KΩ	0Ω		
V 4	6CB6	150KΩ	47Ω	.64Ω	0Ω	†2.5KΩ	†2.5KΩ	0Ω		
V 5	6CB6	.2Ω	150Ω	.37Ω	0Ω	†2.5KΩ	†2.5KΩ	0Ω		
V 6	6AL5	2.7Ω	0Ω	0Ω	.1Ω	0Ω	0Ω	4.3KΩ		
V 7	12BH7	†5.6KΩ	4.3KΩ	220Ω	.1Ω	.1Ω	†6.8KΩ	1 Meg	1.1KΩ	0Ω
V 8	6AU6	100KΩ	0Ω	0Ω	.1Ω	4.1KΩ	†105KΩ	0Ω		
V 9	6AL5	INF	INF	1.3Ω	0Ω	0Ω	0Ω	47KΩ		
V 10	6SQ7	0Ω	10 Meg	0Ω	0Ω	0Ω	†475KΩ	.1Ω	0Ω	
V 11	6V6GT	INF	0Ω	†3.6KΩ	†3.3KΩ	470KΩ	INF	.1Ω	330Ω	
V 12	12BH7	†10KΩ	550KΩ	2.7KΩ	0Ω	0Ω	†70KΩ	11KΩ	0Ω	.1Ω
V 13	12BZ7	†10.5KΩ	2.2Meg	0Ω	0Ω	0Ω	†10.5KΩ	2.6Meg	0Ω	.1Ω
V 14	12BH7	#8.6KΩ	1.5Meg	2.5KΩ	0Ω	0Ω	†2.4Meg	2.4Meg	0Ω	.1Ω
V 15	6AL5	3.4Mgg	3.4Meg	0Ω	1.3Ω	22KΩ	0Ω	22KΩ		
V 16	12BH7	†5.6KΩ	3.8Meg	1.8KΩ	.1Ω	.1Ω	†220KΩ	100KΩ	1.8KΩ	0Ω
V 17	6BQ6GT	470KΩ	0Ω	INF	†11.5KΩ	470KΩ	INF	.1Ω	220Ω	Top Cap #87Ω
V 18	6W4GT	23KΩ	INF	200KΩ	INF	†97Ω	INF	200KΩ	200KΩ	
V 19	1AX2	PINS 1 - 9 HAVE INF RESISTANCE								Top Cap #537Ω
V 20	5U4G	INF	23KΩ	INF	88.2Ω	INF	90.5Ω	INF	23KΩ	
V 21	17HP4	0Ω	1 Meg	Pin 6 16KΩ	Pin 10 #2.2Meg	Pin 11 300KΩ	Pin 12 .1Ω			

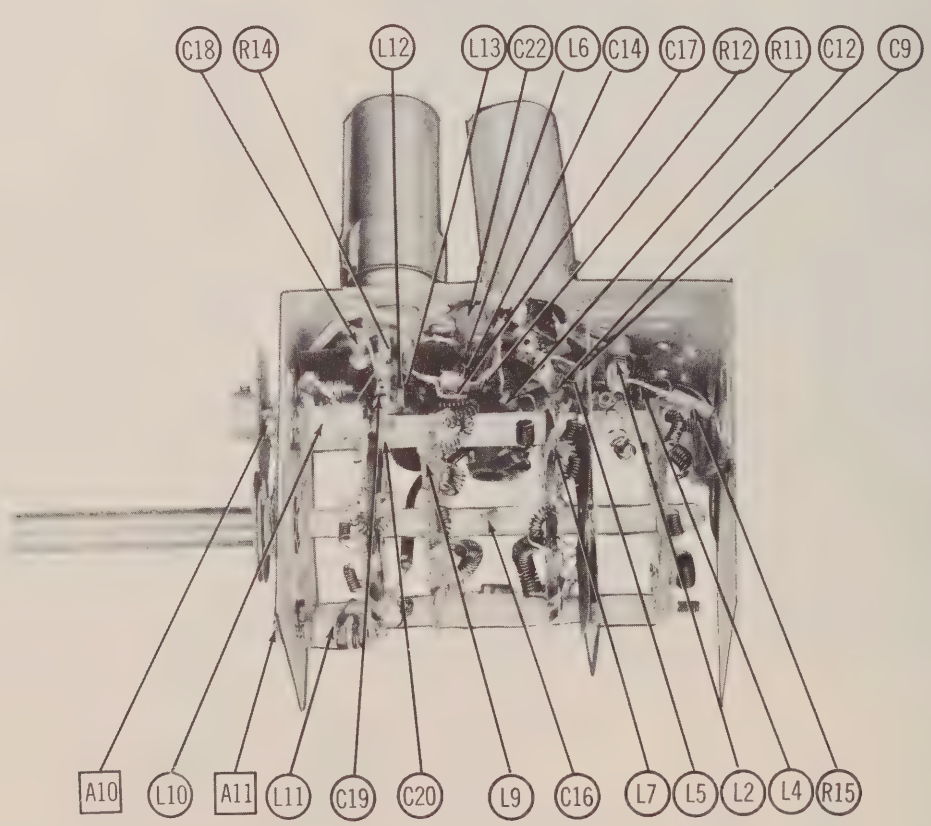
† MEASURED FROM PIN #8 OF V20
# MEASURED FROM PIN #3 OF V18



TUBE PLACEMENT CHART



RF TUNER-RIGHT SIDE



RF TUNER-LEFT SIDE

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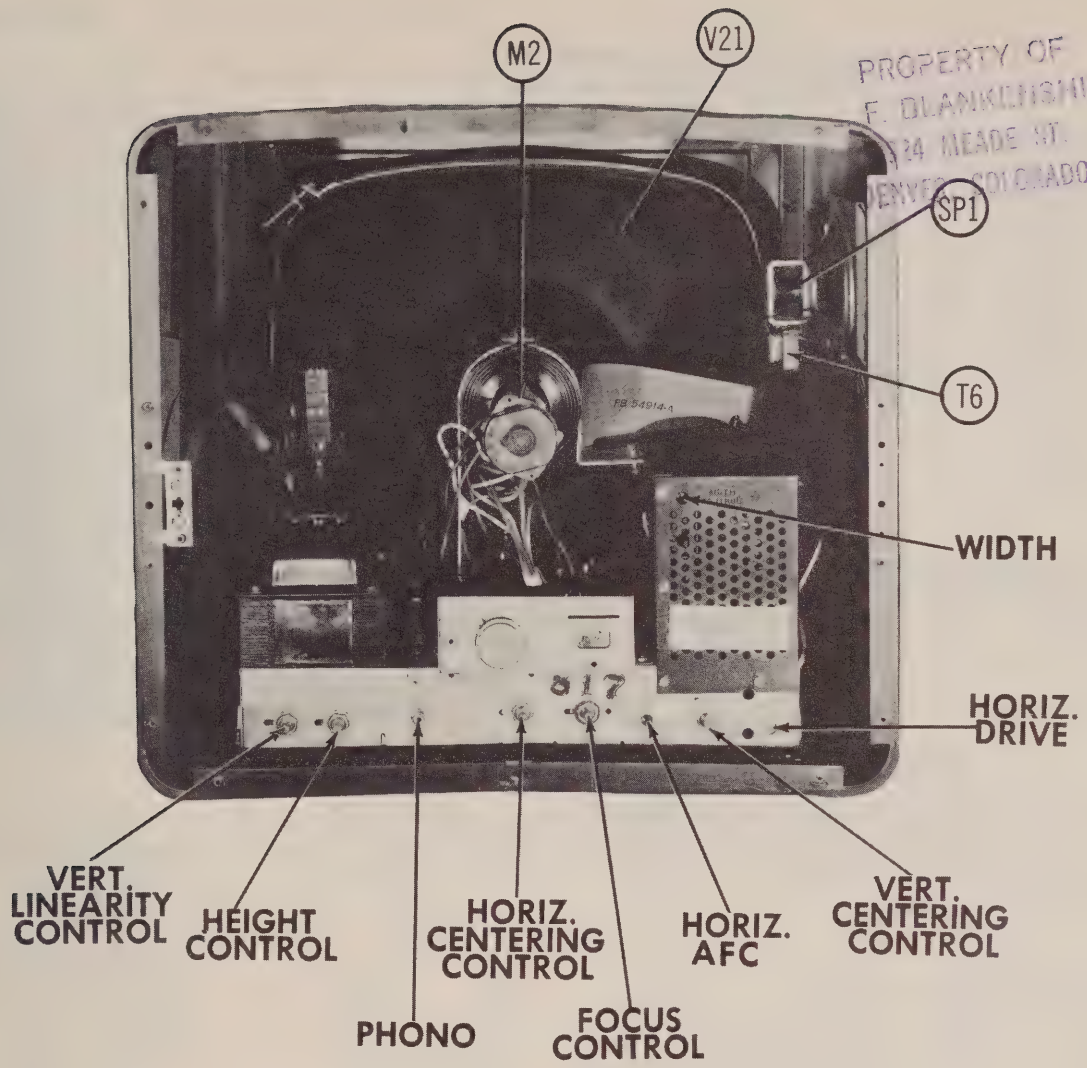


CABINET–REAR VIEW

HORIZONTAL SWEEP CIRCUIT ADJUSTMENTS

Turn the set on and tune in a TV station, preferably a test pattern.

Set the horizontal hold control to the center of its range and adjust the horizontal AFC slug (B1) until the picture synchronizes horizontally.

Adjust the horizontal drive trimmer (B2) in a counter clockwise direction as far as possible without the presence of vertical white lines or compression of the center of the picture.

Adjust the width slug (B3) for a picture slightly wider than necessary to fill the mask horizontally.

Adjust the horizontal linearity slug (B4) for a picture that is symmetrical from left to right.

DISASSEMBLY INSTRUCTIONS

1 Remove 5 push on type control knobs from front panel.

2 Remove 14 metal screws. Remove rear cover.

3 Remove 2 metal screws. Remove antenna bracket.

4 Disconnect speaker. Remove 2 nuts. Remove speaker.

5 Remove 4 chassis bolts. Remove chassis.

NOTE: FOR PICTURE TUBE REMOVAL IT IS NECESSARY TO REMOVE CHASSIS AS OUTLINED ABOVE.

PARTS LIST AND DESCRIPTIONS

TUBES (SYLVANIA or Equivalent)

ITEM No	USE	REPLACEMENT DATA: FIRESTONE Part No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RMA BASE TYPE	NOTES
V1	RF Amplifier	6BC5	6BC5	7BD	
V2	Converter	6J6	6J6	7BF	
V3	1st. Video IF Amp.	6CB6	6CB6	7CM	
V4	2nd Video IF Amp.	6CB6	6CB6	7CM	
V5	3rd. Video IF Amp.	6CB6	6CB6	7CM	
V6	Video Detector	6AL5	6AL5	6BT	
V7	Video Amplifier-Video Output	12BH7	12BH7	9A	
V8	Sound IF Amp.	6AU6	6AU6	7BK	
V9	Ratio Detector	6AL5	6AL5	6BT	
V10	AF Amplifier	6SQ7	6SQ7		
V11	Audio Output	6V6GT	6V6GT	7AC	
V12	Sync Amplifier - Sync Phase Inv.	12BH7	12BH7	9A	
V13	Sync Separator	12BZ7	12BZ7	9AJ	
V14	Vert. Oscillator-Vert. Output	12BH7	12BH7	9A	
V15	Horiz. AFC	6AL5	6AL5	6BT	
V16	Horiz. Mult.	12BH7	12BH7	9A	
V17	Horiz. Output	6BQ6GT	6BQ6GT	6AM	
V18	Damper	6W4GT	6W4GT	4CG	
V19	HV Rectifier	1AX2	1AX2		
V20	LV Rectifier	5U4G	5U4G	5T	

CATHODE-RAY TUBE

ITEM No.	REPLACEMENT DATA: FIRESTONE Part No.	REPLACEMENT DATA: SYLVANIA Part No.	RTMA BASE TYPE	NOTES
V21	17HP4	17HP4	12C	
		17RP4	12C	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING CAP.	RATING VOLT	REPLACEMENT DATA: FIRESTONE Part No.	AEROVOX Part No.	CENTRALAB Part No.	CORNELL-DUBILIER Part No.	ERIE Part No.	MALLORY Part No.	SPRAGUE Part No.	NOTES
C1A	40	450	A30144	PRS450/40-40		UPT4445		FP647	TVA-2740	Red
B	40	450		PRS450/20-20		BRD3245			TVA-2722	Blue
C	20	450								Orange
D	20	450								Green
C2A	10	450	A30135	AFH3-31		UP11145		4N727	TVL-3776	Red
B	10	450								Yellow
C	10	450								Blue
C3	10	250	A30145	PRS250/12		BR1235A		TC52	TVA-1504	
C4	100	25	A30130	PRS25/100		BH3515A		TC3501	TVA-1207	
C5	10	25	A30137	PRS25/10		BR102A		TC32	TVA-1204	
C6	25	12	A30147	PRS25/25		BR352A		TC36	TVA-1205	
C7	1	50	A30138	E26R75		BBR-1-50T		TC31	TVA-1300	
C8	1	50	A30138	E26R75		BBR-1-50T		TC31	TVA-1300	
C9	15		A556-303	SU15	D6-150		GP1K-150	UC-5415	5GA-Q15	
C10	800			BPD-0008	DD-801	TM5T8	801-001	DC-521	5HK-D1	
C11	470		A191-39	SI470	D6-471	TM5T5	GP2K-471	UC-5347	5GA-T47	
C12	800			BPD-0008	DD-801	TM5T8	801-001	DC-521	5HK-D1	
C13	800			BPD-0008	DD-801	TM5T8	801-001	DC-521	5HK-D1	
C14	.8									
C15	1.8									
C16	1.5			SIL.5NP0	TCZ-1.5		NP0K-1R5	ZT-5515	5TCCB-V15	
C17	470		A191-39	SI470	D6-471	TM5T5	GP2K-471	UC-5347	5GA-T47	
C18	.39									
C19	10			SI10N750	TCN-10		N750K-100	NT-541	5TCU-Q1	
C20	12				TCZ-12		NP0K-120 N330K-040			
C21	4									
C22	800			BPD-0008	DD-801	TM5T8	801-001	DC-521	5HK-D1	
C23	15		A556-203	SI15	D6-150		GP1K-150	UC-5415	5GA-Q15	
C24	5000		A19109	BPD-005	DD-502	TM5D5	811-005	DC-525	5HK-D5	
C25	270	500	A190-133							
C26	6.8		A19177	SI6.8NP0	TCZ-6.8		NP0K-6R8		5TCCB-V68	
C27	100	500		469-0001		SR5T1		MCB235	MS-31	Note 1
C28A	1500		A19147	BPD-2X0015	DD-2-152	TM5DD15	812-0015	DCD-5215	5HK-2D15	
B	1500									
C29	680	500	A556-234							
C30	5000		A19109	BPD-005	DD-502	TM5D5	811-005	DC-525	5HK-D5	
C31	270	500	A190-133							
C32	1500		A19148	BPD-0015	DD-152	TM5D15	801-0015	DC-5215	5HK-D15	
C33	5000		A19109	BPD-005	DD-502	TM5D5	811-005	DC-525	5HK-D5	
C34	5000		A19109	BPD-005	DD-502	TM5D5	811-005	DC-525	5HK-D5	
C35	270	500	A190-132							
C36	510		A556-233							
C37A	4700		A19163	BPD-005	DD-2-502	TM5D5	811-005	DC-525	5HK-2D47	
B	4700			BPD-005		TM5D5	811-005	DC-525		
C38	22	500	A190-107	469-000025		SR5Q25			MS-425	
C39	5000		A19109	BPD-005	DD-502	TM5T5	811-005	DC-525	5HK-D5	
C40	10		A555-101	SI10	D6-100	5W5Q1	GP1K-100	UC-541	5GA-Q1	
C41	1000		A555-136	SI1000	D6-102	TM5D1	GP2L-102	UC-531	5HK-D1	
C42	.05	600	A194-180	P688-05	DF-503	PTE685		PT615	6TM-S5	
C43	1000		A195-136	SI1000	D6-102	TM5D1	GP2L-102	UC-531	5HK-D1	
C44	47		A555-113	SI47NP0	TCZ-47		NP0L-470	ZT-5447	5TCC-Q47	
C45	.05	300	A194-180	P688-05	DF-503	PTR685		PT615	6TM-S5	
C46	5		A555-109	SI5	TCZ-4.7		GP1K-050	ZT-555	5GA-Q5	
C47	47		A555-113	SI47NP0	TCZ-47		NP0L-470	ZT-5447	5TCC-Q47	
C48	47		A555-113	SI47NP0	TCZ-47		NP0L-470	ZT-5447	5TCC-Q47	
C49	1500		A19148	BPD-0015	DD-152	TM5D15	801-0015	DC-5215	5HK-D15	
C50	.005	600	A194-151	P688-005	DF-502	PTE6D5	GP3-333-502	PT625	6TM-D5	
C51	1000		A556-236	SI1000	D6-102	TM5D1	GP2L-102	UC-531	5HK-D1	
C52	.05	600	A194-180	P688-05	DF-503	PTE685		PT615	6TM-S5	

CAPACITORS (CONT.)

ITEM No.	RATING CAP.	RATING VOLT	REPLACEMENT DATA: FIRESTONE Part No.	AEROVOX Part No.	CENTRALAB Part No.	CORNELL-DUBILIER Part No.	ERIE Part No.	MALLORY Part No.	SPRAGUE Part No.	NOTES
C53	.02	600	A194-156	P688-02	DF-202	PTE6D2		PT622	6TM-S2	
C54	.001	600	A194-145	P688-001	D6-102	PTE6D1	GP2L-102	PT621	6TM-D1	
C55	.05	600	A194-180	P688-05	DF-503	PTE685		PT615	6TM-S5	
C56	.01	600	A194-155	P688-01	D6-103	PTE6S1	GP2-333-103	PT611	6TM-S1	
C57	.005	600	A194-151	P688-005	D6-502	PTE6D5	GP2-333-502	PT625	6TM-D5	
C58	.02	600	A195-156	P688-02	DF-203	PTE6S2		PT612	6TM-S2	
C59	.390	500	A190-137	1469-0004		5R5T4		MCB242	MS-34	
C60	.270	500	A190-133	1469-0003		5R5T3		MCB341	MS-33	
C61	.01	600	A194-155	P688-01	D6-103	PTE6S1	GP2-333-103	PT611	6TM-S1	
C62	.01	800	A194-155	P688-01	D6-103	PTE6S1	GP2-333-103	PT611	6TM-S1	
C63	.005	600	A194-151	P688-005	D6-502	PTE6D5	GP2-333-502	PT625	6TM-D5	
C64	.001	600	A194-145	P688-01	D6-103	PTE6S1	GP2-333-103	PT611	6TM-S1	
C65	.005	800	A194-151	P688-005	D6-502	PTE6D5	GP2-333-502	PT625	6TM-D5	
C66	4700	500	A194-163	1464-005		1DR5D5		MCB465	MS-25	
C67	.035	600	A194-159							Note 3
C68	.02	600	A194-156	P688-02	DF-203	PTE6S2		PT612	6TM-S2	
C69	.05	800	A194-160	P688-05	DF-503	PTE685		PT615	6TM-S5	
C70	.01	600	A194-155	P688-01	D6-103	PTE6S1	GP3-333-103	PT611	6TM-S1	
C71	.05	600	A194-160	P688-05	DF-503	PTE685		PT615	6TM-S5	
C72	.05	800	A194-160	P688-05	DF-503	PTE685		PT615	6TM-S5	
C73	.001	800	A194-145	P688-001	D6-102	PTE6D1	GP2L-102	PT621	6TM-D1	
C74	.001	600	A194-145	P688-001	D6-102	PTE6D1	GP2L-102	PT621	6TM-D1	
C75	.005	600	A194-151	P688-005	D6-502	PTE6D5	GP2-333-502	PT625	6TM-D5	
C76	.005	800	A194-151	P688-005	D6-502	PTE6D5	GP2-333-502	PT625	6TM-D5	
C77	.05	800	A194-160	P688-05	DF-503	PTE685		PT615	6TM-S5	
C78	3900	500	A195-261	1464-004		1DR5D4		MCB463	MS-24	
C79	390	500	A190-137	1469-0004		5R5T4		MCB243	MS-34	
C80	390	500	A195-137	1469-0004		5R5T4		MCB243	MS-34	
C81	270	500	A191-133	1469-0003		5R5T3		MCB241	MS-33	
C82	25	1500	A19172							Note 2
C83	10	2500	A19146					MCP410		
C84	.05	600	A194-160	P688-05	DF-503	PTE685		PT615	6TM-S5	
C85	.1	600	A194-162	P688-1		PTE6P1		PT601	6TM-P1	
C86	.75	600	A194-160	P688-05		PTE685		PT615	6TM-S5	
C87	500	20000	A1998-3	HV20C	TV3-502	MM-C20TS	413-501		20DK-T5	
C88	220	1000	A19180					MCK322		
C89	.01	600	A19106	6892GZXY-01		PJS51		PT611	6TM-S1	
C90	.01	600	A19106	6892GZXY-01		PJS51		PT611	6TM-S1	

Note 1. Some Models use 82MMF in this application.

CONTROLS

ITEM No.	RATING RESISTANCE	RATING WATTS	REPLACEMENT DATA: FIRESTONE Part No.	IRC Part No.	CLAROSTAT Part No.	CENTRALAB Part No.	MALLORY Part No.	INSTALLATION NOTES
R1A	5000Ω	½	A24142	QJ-363 *	RTV-381		UP53R	Contrast-Panel
B	250KΩ	½					UR254A	Volume-Rear
C	Switch						US-26	Attach to R1B
R2A	100KΩ	½	A24110	QII-128	AG-49-8	AB-40	SU-41	Brightness
B	Shaft		Not Req.	Not Req.	FKS-1/4	AK-1	Not Req.	Attach to R2A
R3A	2000Ω	½	A24141	QII-114	AG-18-8	AB-10	SU-14	Horiz. Hold
B	Shaft		Not Req.	Not Req.	FKS-1/4	AK-1	Not Req.	Attach to R3A
R4A	1 Meg	½	A24112	QII-137	AG-61-8	AB-89	SU-54	Vert. Hold
B	Shaft		Not Req.	Not Req.	FKS-1/4	AK-1	Not Req.	Attach to R4A
R5A	1 Meg	½	A24112	QII-137	AG-61-8	AB-89	SU-54	Focus
B	Shaft		Not Req.	Not Req.	FKS-1/4	AK-1	Not Req.	Attach to R5A
R6A	3000Ω	½	A24114		AG-18-8		U-8	Vert. Linearity
B	Shaft		Not Req.		FKS-1/4		Not Req.	Attach to R6A
R7A	5 Meg	½	A24111	QII-141	AG-85-8	AB-87	SU-67	Height
B	Shaft		Not Req.	Not Req.	FKS-1/4	AK-1	Not Req.	Attach to R7A
R8A	100Ω	2	A24116	W-100	A43-100	VK-121	R100L	Horiz. Centering-Wire Wound
B	Shaft		Not Req.	Not Req.	FKS-1/4	Not Req.	Not Req.	Attach to R8A
R9	20Ω	2	A24118	W20X10	RTV-68	BVT-901	R20CT	Vert. Centering-Tap @ 10Ω-Wire Wound

* CONCENTRIKIT EQUIVALENT-KIT K-2, BASE ELEMENTS & SHAFTS B17-114 & P1-106 (Panel)
B13-130 & R1-126 (Rear) & SWITCH 76-1

RESISTORS

ITEM No.	RATING OHMS	RATING WATT	REPLACEMENT DATA: FIRESTONE Part No.	IRC Part No.	NOTES
R10	4700Ω	1	A231-1165	BTS-4700	
R11	15KΩ	1	A231-1177	BTS-15K	
R12	2200Ω	1	A231-1157	BTS-2200	
R13	220KΩ	1	A231-1205		
R14	15KΩ	1	A231-1177	BTS-15K	
R15	10KΩ	1	A231-1173	BTS-10K	
R16	3900Ω	1	A231-1163	BTS-3900	
R17	33Ω	1	A231-1113		
R18	82Ω	1	A231-1123	BTS-82	
R19	330Ω	1	A231-1137	BTS-330	
R20	47KΩ	1	A231-1189		
R21	47Ω	1	A231-1117		
R22	220Ω	1	A231-1133	BTS-220	
R23	8200Ω	1	A231-1171		
R24	150Ω	1	A231-1129	BTS-150	
R25	220Ω	1	A231-1133	BTS-220	
R26	100KΩ	1	A231-1197	BTS-100K	
R27	15KΩ	1	A231-1177	BTS-15K	
R28	4700Ω	1	A231-1165	BTS-4700	
R29	82Ω	1	A231-1123		
R30	220Ω	1	A231-1133	BTS-220	
R31	4700Ω	1	A231-1165	BTS-4700	
R32	3300Ω	1	A232-1161	BTA-3300	
R33	1 Meg	1	A231-1221	BTS-1 Meg	
R34	150Ω	1	A231-1129	BTS-150	
R35	120Ω	1	A231-1127	BTS-120	
R36	11KΩ-5%	2	A233-74	BTB-11K-5%	
R37	18KΩ	2	A233-1179	BTB-18K	
R38	270KΩ	1	A231-1207	BTS-270K	
R39	1 Meg	1	A231-1221	BTS-1 Meg	
R40	100KΩ	1	A231-1197	BTS-100K	
R41	100KΩ	1	A231-1197	BTS-100K	
R42	1800Ω	1	A231-1155	BTS-1800	
R43	47KΩ	1	A231-1189	BTS-47K	
R44	10 Meg	1	A231-1245	BTS-10 Meg	
R45	470KΩ	1	A231-1213	BTS-470K	
R46	470KΩ	1	A231-1213	BTS-470K	
R47	330Ω	1	A232-1137	BTA-330	
R48	3250Ω	7	A21134-4	1 3/4A-3500	
R49	27KΩ	½	A231-1183	BTS-27K	
R50	68KΩ	1	A231-1193	BTS-68K	
R51	12KΩ	1	A231-1175	BTS-12K	
R52	470KΩ	1	A231-1213	BTS-470K	
R53	2.2Meg	1	A231-1229	BTS-2.2Meg	
R54	2.2Meg	1	A231-1229	BTS-2.2Meg	
R55	8200Ω	1	A231-1171	BTS-8200	
R56	22KΩ	1	A231-1181	BTS-22K	
R57	1 Meg	1	A231-1221	BTS-1 Meg	
R58	22KΩ	1	A231-1181	BTS-22K	
R59	1 Meg	1	A231-1221	BTS-1 Meg	
R60	2700Ω	1	A231-1159	BTS-2700	
R61	3900Ω	1	A231-1163	BTS-3900	
R62	3900Ω	1	A231-1163	BTS-3900	
R63	22KΩ	1	A231-1181	BTS-22K	
R64	22KΩ	1	A231-1181	BTS-22K	
R65	8200Ω	1	A231-1171	BTS-8200	
R66	47KΩ	1	A231-1189	BTS-47K	
R67	1.8Meg-5%	1	A233-127	BTA-1.8Meg-5%	

RESISTORS (CONT.)

ITEM No	RATING OHMS	RATING WATT	REPLACEMENT DATA: FIRESTONE Part No.	IRC Part No.	NOTES
R68	6800Ω	1	A231-1169	BTS-6800	
R69	470KΩ	1	A231-1213	BTS-470K	
R70	47KΩ	1	A231-1189	BTS-47K	
R71	1.5Meg	1	A231-1225	BTS-1.5Meg	
R72	1800Ω	1	A231-1155	BTS-1800	
R73	47KΩ	1	A221-1189	BTA-47K	
R74	150KΩ	1	A221-1201	BTA-150K	
R75	3300Ω	2	A233-1181	BTB-3300	
R76	3300Ω	2	A233-1181	BTB-3300	
R77	2.2Meg	1	A232-1229	BTA-2.2Meg	
R78	33KΩ	1	A231-1185	BTS-33K	
R79	100KΩ	1	A231-1197	BTS-100K	
R80	100KΩ	1	A231-1197	BTS-100K	
R81	3.3Meg	1	A231-1233	BTS-3.3Meg	
R82	470KΩ	1	A231-1213	BTS-470K	
R83	22KΩ	1	A232-1181	BTA-22K	
R84	5800Ω	1	A231-1167	BTS-5800	
R85	1800Ω	1	A231-1155	BTS-1800	
R86	100KΩ	1	A231-1197	BTS-100K	
R87	220KΩ	1	A231-1205	BTS-220K	
R88	270KΩ	1	A231-1207	BTS-270K	
R89	470KΩ	1	A231-1213	BTS-470K	
R90	82Ω	1	A231-1123		
R91	220Ω	2	A233-1133	bW-2-220	Note 1
R92	.5Ω	1			
R93	1 Meg	2	A233-2321		
R94	15KΩ	1	A232-1177	BTA-15K	
R95	2250Ω	15	A2134-16	2D-2250	
R96	4700Ω	2	A233-1165	BTB-4700	
R97	6800Ω	2	A233-1169	BTB-6800	
R98	1.2Ω	1	A2315i		
R99	80Ω	10	A2134-2		
R100	10KΩ	1	A231-1173	BTS-10K	

When V19 is 1X2A, R92 is 2.4Ω.
Note 1. Some models use a .56Ω resistor in this application.

TRANSFORMER (POWER)

ITEM No.	RATING PRI.	RATING SEC. 1	RATING SEC. 2	RATING SEC. 3	REPLACEMENT DATA: FIRESTONE Part No.	STANCOR Part No.	MERIT Part No.	CHICAGO Part No.	TRIAD Part No.
T1	117VAC @ 1.9A	630VCT @ 230ADC	5VAC @ 3A	6.3VAC @ 2A Sec. 4 6.3VAC @ 9A	A-10109	P-8171	P-3069		R-6B38

TRANSFORMER (SWEEP CIRCUITS)

ITEM No.	RATING DC RESISTANCE PRI.	RATING DC RESISTANCE SEC.	REPLACEMENT DATA: FIRESTONE Part No.	STANCOR Part No.	MERIT Part No.	CHICAGO Part No.	TRIAD Part No.	NOTES
T2	160Ω	950Ω	B-10106 A-10106 ①	A-8111	A-3000	TBO-1 ②	A-97X ③	Vert. osc. trans.
T3	510Ω top @ 80Ω	18Ω top @ 12Ω Sec. #2 3.13Ω top @ .13Ω Sec. #3 .06Ω	A-10136	A-8130 ④ ⑤	HVO-7 ⑥	TFB-5 ③ ⑦	D-14 ⑧ ⑨	Horiz. output trans.
T4	2KΩ	5.5Ω	A-10152-1			A-105X	Y-12	Vert. output trans.
T5A	12Ω		A-28322-1	DY-8A	MDF-70	TY-2		Horiz. deflection coils
B	53Ω		A-28278-3 ⑩					Vert. deflection coils.

① Alternate vert. osc. trans.
② Mount on top of chassis.
③ Drill one new mounting hole
④ Drill new mounting holes.
⑤ Use with width coil WC-5.
⑥ Use with width coil WMC-1.
⑦ Use width coil (with AGC Winding) with approx. 4-29 millihenry range.
⑧ Use with width coil WC-11
⑨ Alternate deflection yoke.

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	RATING IMPEDANCE PRI.	RATING IMPEDANCE SEC.	RATING DC RES. PRI.	RATING DC RES. SEC.	REPLACEMENT DATA: FIRESTONE Part No.	STANCOR Part No.	MERIT Part No.	CHICAGO Part No.	TRIAD Part No.	NOTES
T6	4.8KΩ	3.15Ω	382Ω	83Ω	38C53	A-3877 ①	A-2930 ①	RO-9 ①	S-2X ①	① Drill one new mounting hole.

SPEAKER

ITEM No.	RATINGS SIZE	RATINGS FIELD	RATINGS V. C. IMP.	REPLACEMENT DATA: FIRESTONE Part No.	JENSEN Part No	QUAM Part No	NOTES
SP1	5"	PM	3-15Ω	A5866 A5812A ①	SI-10 Mod. P5-X	5A07	① Alternate 5" PM Speaker used in Model 13-G-117.

FILTER CHOKE

ITEM No.	RATINGS TOTAL DIRECT CURRENT	RATINGS D. C. RESISTANCE	RATINGS INDUCTANCE @ CURRENT 1000 Cps.	REPLACEMENT DATA: FIRESTONE Part No.	STANCOR Part No.	MERIT Part No.	CHICAGO Part No	TRIAD Part No
L1	230A	61Ω	1.83HY	A-1406	C-2336 ①	C-3996 ①	TR-1733 ①	C-21X

① Drill one new mounting hole.

FIRESTONE MODELS 13-G-114, A, 13-G-117

PARTS LIST AND DESCRIPTIONS (Continued)

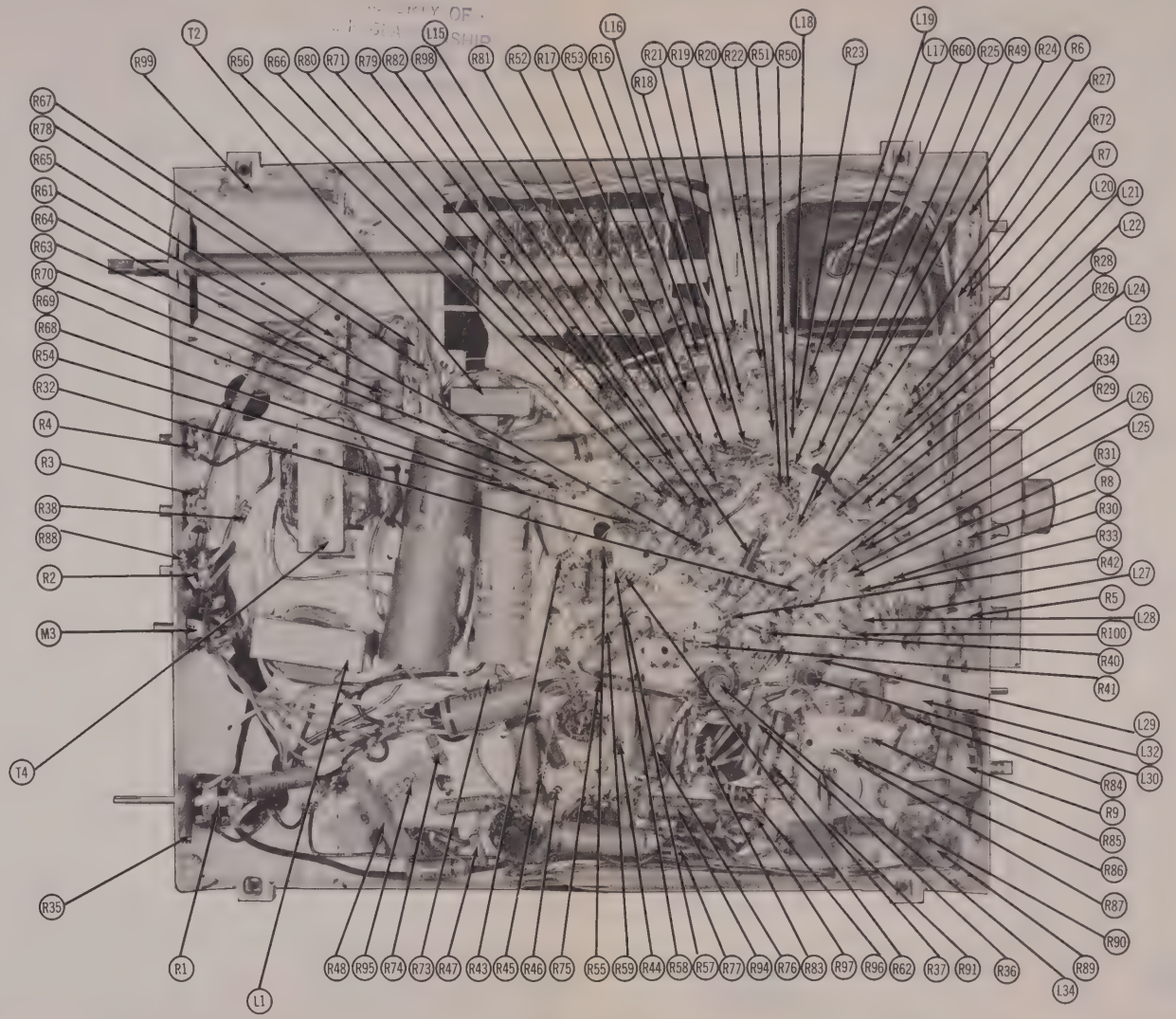
COILS (RF-IF)

ITEM No.	USE	DC RES.		REPLACEMENT DATA			NOTES
		PRI.	SEC.	FIRESTONE PART No.	MERIT PART No.	IRC PART No.	
L2	Ant. Trans.	0Ω	0Ω	A28280-24			
L3	Ant. Coils	0Ω					
L4	Ant. Shunt Coils	0Ω					
L5	Ant. Coil	0Ω		A28830-20			Channel 13.
L6	RF Coil	0Ω		A28280-21			Channel 13.
L7	RF Coils	0Ω					
L8	Mixer Grid Coil	0Ω					Channel 13.
L9	Mixer Grid Coils	0Ω					
L10	Osc. Coil	0Ω		A28280-22			Channel 13.
L11	Osc. Coils	0Ω					
L12	Fil. Choke	0Ω		A28280-23			
L13	RF Choke	1.2Ω					
L14	1st Video IF	.6Ω		A28280-19	TV-103■		
L15	21.25MC Trap	0Ω		A28314			
L16	2nd Video IF	.2Ω		A3392	TV-102■		
L17	Fil. Choke	.27Ω		A28276		CL-1	.82 Microhenries.
L18	RF Choke	2.7Ω		A28253			
L19	3rd Video IF	.2Ω		A3392	TV-103■		
L20	Fil. Choke	.27Ω		A28276		CL-1	.82 Microhenries.
L21	4th Video IF	.2Ω		A3392	TV-102■		
L22	Cathode Choke	2.7Ω		A28253			
L23	Series Peaking Coil	6.5Ω		A28255-2	TV-184		194 Microhenries.
L24	Shunt Peaking Coil	7.5Ω		A28255-1	TV-181		130 Microhenries.
L25	Series Peaking Coil	6.5Ω		A28255-2	TV-184		194 Microhenries
L26	Shunt Peaking Coil	7.5Ω		A28255-1	TV-181		130 Microhenries.
L27	4.5MC Trap	2.6Ω		A28286	TV-151■		
L28	Series Peaking Coil	7.5Ω		A28255-1	TV-181		130 Microhenries.
L29	Shunt Peaking Coil	9.5Ω		A28255-4			314 Microhenries.
L30	Sound IF	2.6Ω		A28286	TV-151■		
L31	Ratio Det.	5.5Ω	2ΩCT	A1201*	TV-115		Tertiary Winding - .5Ω.
L32	Horiz. Osc.	60Ω		A28263	TV-163		
L33	Width Coil	1Ω		A28279-1	MWC-2■		
L34	Hor. Lin.	27Ω		A28292	MWC-1■		

* Alternate Part No. 1202.
■ Enlarge mounting hole.

MISCELLANEOUS

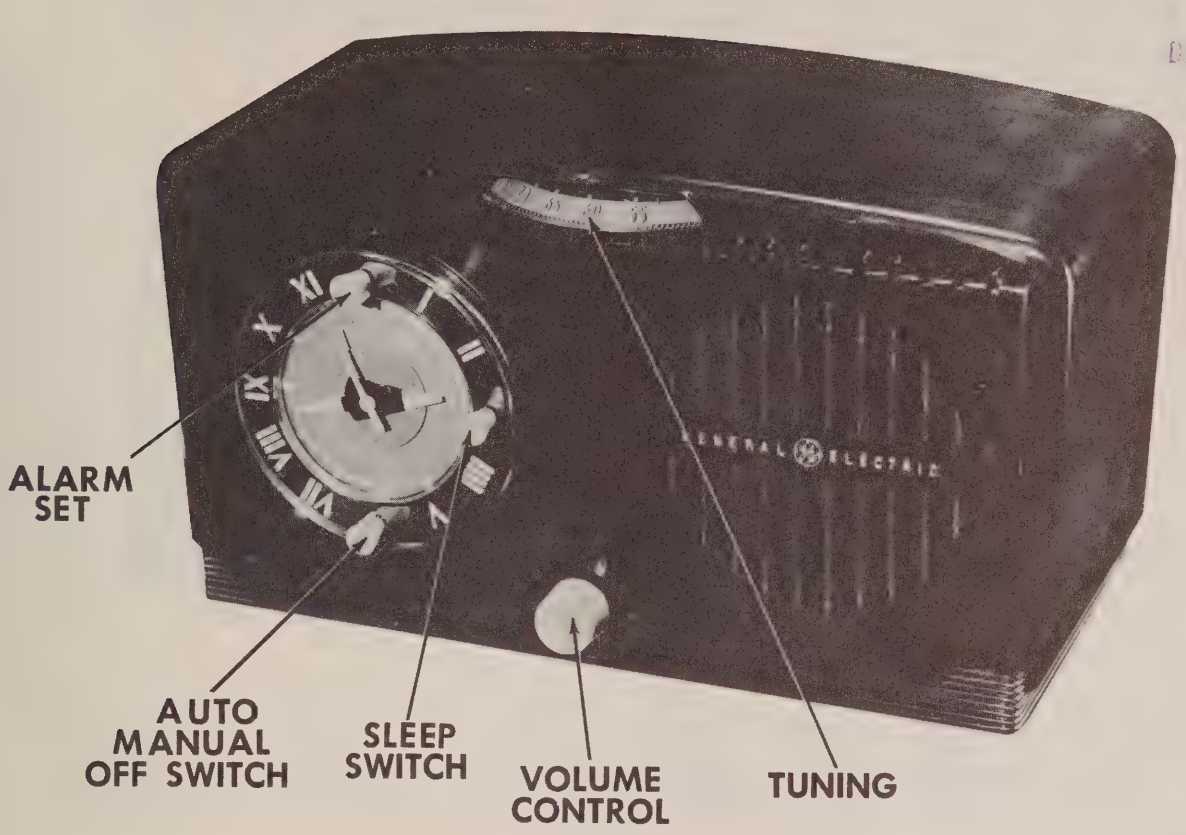
ITEM No.	PART NAME	FIRESTONE PART No.	NOTES
M1	RF Tuner	T2306	
M2	Ion Trap	A3206	
M3	Switch	A37105	Phono - TV
B2	Trimmer	A1772	Horiz. Drive(25-280MMF)
	Knob	A39242-1	Channel Selector
	Knob	A39240-3	Fine Tuning
	Knob	A39241-1	On/Off Volume
	Knob	A39239-3	Contrast
	Knob	A39249	TV-Phono Switch
	Cabinet	A60168-3	Model 13-G-114
	Cabinet	A60165-3	Model 13-G-114A
	Cabinet	A60170-3	Model 13-G-117
	Mask	A62367-1	Model 13-G-114
	Mask	A62366-3	Model 13-G-117
	Safety Glass	A62290	Model 13-G-114
	Safety Glass	A62327	Model 13-G-114A
	Safety Glass	A62368	Model 13-G-117
	Back Cover	A62452	Model 13-G-114
	Back Cover	A62329	Model 13-G-114A
	Back Cover	A62429	Model 13-G-117
	Trap Door Cover	A4497	



CHASSIS BOTTOM VIEW-RESISTOR AND INDUCTOR IDENTIFICATION

PROPERTY OF

GENERAL ELECTRIC
MODELS 514, 542, 543



GENERAL ELECTRIC
MODELS 514, 542, 543

GENERAL ELECTRIC MODEL 542

TRADE NAME	General Electric Models 514, 542, 543
MANUFACTURER	General Electric Co., Electronics Dept., Electronics Park, Syracuse, N.Y.
TYPE SET	AC Operated AM Superheterodyne Receiver with Electric Clock
TUBES (Five)	Types 12BE6 Conv., 12BA6 IF Amp., 12AV6 Det.-AVC-AF Amp., 50C5 Audio Output, 35W4 Rectifier
POWER SUPPLY	110-120 Volts AC-60 Cycle RATING .26 Amp. @ 117 Volts AC
TUNING RANGE—BROADCAST	540-1600 KC

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

To set pointer, turn tuning capacitor fully closed and set pointer to last reference mark at low frequency end of dial. Use isolation transformer, if available. If not, connect a .1MFD capacitor in series with low side of signal generator and B-. Loop should be maintained in same relative position to chassis as when receiver is in cabinet. Volume control should be at maximum position. Output of signal generator should be no higher than necessary to obtain an output reading. Use an insulated alignment screwdriver for adjusting.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
1.	.05MFD	High side to green lead of loop. Low side to B-.	455KC (400~Mod.)	Tuning gang fully open	Across voice coil	A1, A2, A3, A4	Adjust for maximum output, If isolation transformer is not used, reduce dummy antenna to .001MFD to reduce hum modulation.
2.		Loop	1620 KC	"	"	A5	Fashion loop of several turns of wire and radiate signal into loop of receiver. Adjust for maximum output.
3.		"	1500 KC	Tune for maximum output	"	A6	"

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PARTS LIST AND DESCRIPTIONS

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA		RTMA BASE TYPE	INSTALLATION NOTES
		General Electric PART No.	STANDARD REPLACEMENT		
V1	Converter	12BE6	12BE6	7CH	
V2	IF Amplifier	12BA6	12BA6	7BK	
V3	Det-AVC-AF Amp.	12AV6	12AV6	7BT	
V4	Audio Output	50C5	50C5	7CV	
V5	Rectifier	35W4	35W4	5BQ	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING		REPLACEMENT DATA							NOTES
	CAP.	VOLT	General Electric PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	MALLORY PART No.	SPRAGUE PART No.	
C1A	50	150	RCE-127	PRS150/50-50		BRD5515A		TCD49	TVA-2453	Red
B	50	150								Yellow
C2	47		RCW-3075	BPD-000047	D6-470	TM5Q5	GP1K-470	UC-5447	5GA-Q47	
C3	.05	400	UCC-045	P488-05	DF-503	PTE4S5		PT415	4TM-S5	
C4A	400			SI390	D6-391		GP2K-401	UC-534	5GA-T39	
B	.002			BPD-002	DD-202	TM5D2	801-002	DC-522	5HK-D2	
C	220		RCW-3048	SI220	D6-221	5W5T25	GP2K-221	UC-5322	5GA-T22	
D	.005			BPD-005	DD-502	TM5D5	811-005	DC-525	5HK-D5	
C5	.003	600	UCC-037	P688-003	D6-302	PTE6D3	GP2-333-302	PT623	6TM-D3	
C6	.05	600	UCC-045	P688-05		PTE6S5		PT615	6TM-S5	
C7	.05	400	UCC-045	P488-05		PTE4S5		PT415	4TM-S5	

CONTROLS

ITEM No.	RATING		REPLACEMENT DATA					INSTALLATION NOTES
	RESISTANCE	WATTS	General Electric PART No.	IRC PART No.	CLAROSTAT PART No.	CENTRALAB PART No.	MALLORY PART No.	
R1A	500KΩ	½	RRC-054	Q13-133	AG-60-Z	BSK-60	U-48	Volume
B	Shaft		Not Req.	Not Req.	KSS-3	Not Req.	Not Req.	Attach to R1A.

RESISTORS

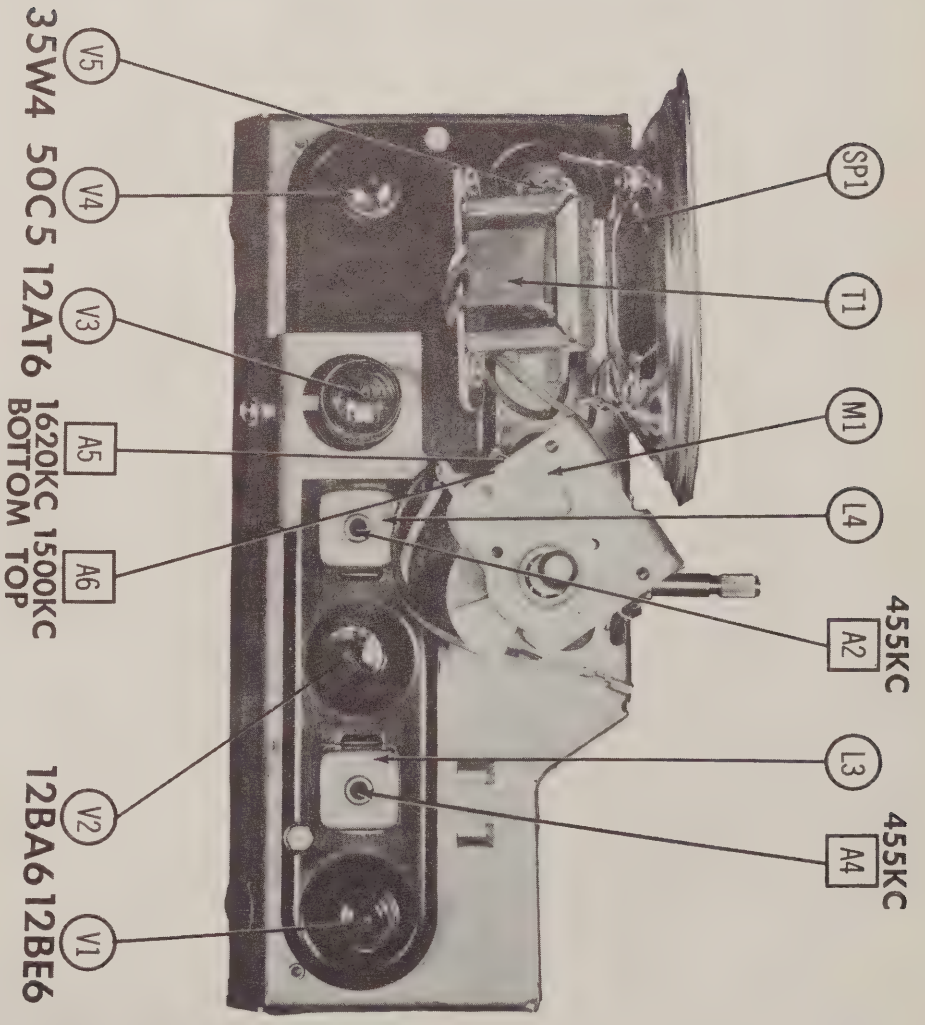
ITEM No.	RATING		REPLACEMENT DATA		NOTES
	OHMS	WATT	General Electric PART No.	IRC PART No.	
R2	22KΩ	½	URD-081	BTS-22K	
R3	100Ω	½	URD-025		
R4	68Ω	½	URD-021		
R5	2.2Meg	½	URD-129	BTS-2.2Meg	
R6	6.8Meg	½	URD-141	BTS-6.8Meg	

ITEM No.	RATING		REPLACEMENT DATA		NOTES
	OHMS	WATT	General Electric PART No.	IRC PART No.	
R7	470KΩ	½	URD-113	BTS-470K	
R8	470KΩ	½	URD-113	BTS-470K	
R9	150Ω	½	URD-029	BTS-150	
R10	1000Ω	2	URF-049	BTB-1000	
R11	18Ω	½	URD-007		

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	RATING				REPLACEMENT DATA					NOTES
	IMPEDANCE		DC RES.		General Electric PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	TRIAD PART No.	
	PRI.	SEC.	PRI.	SEC.						
T1	2.6KΩ	3.4Ω	240Ω tap @ 15Ω	.5Ω	RTO-099	A-3330 ①	A-3031 ①	RO-3 ①		① Drill one new mounting hole.

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

SPEAKER

ITEM No.	RATINGS			REPLACEMENT DATA			NOTES
	SIZE	FIELD	V. C. IMP.	General Electric PART No.	JENSEN PART No.	QUAM PART No.	
SP1	4"	PM	3.4Ω	ROP-022	ST-113 Mod. P4-X	4A07	

COILS (RF-IF)

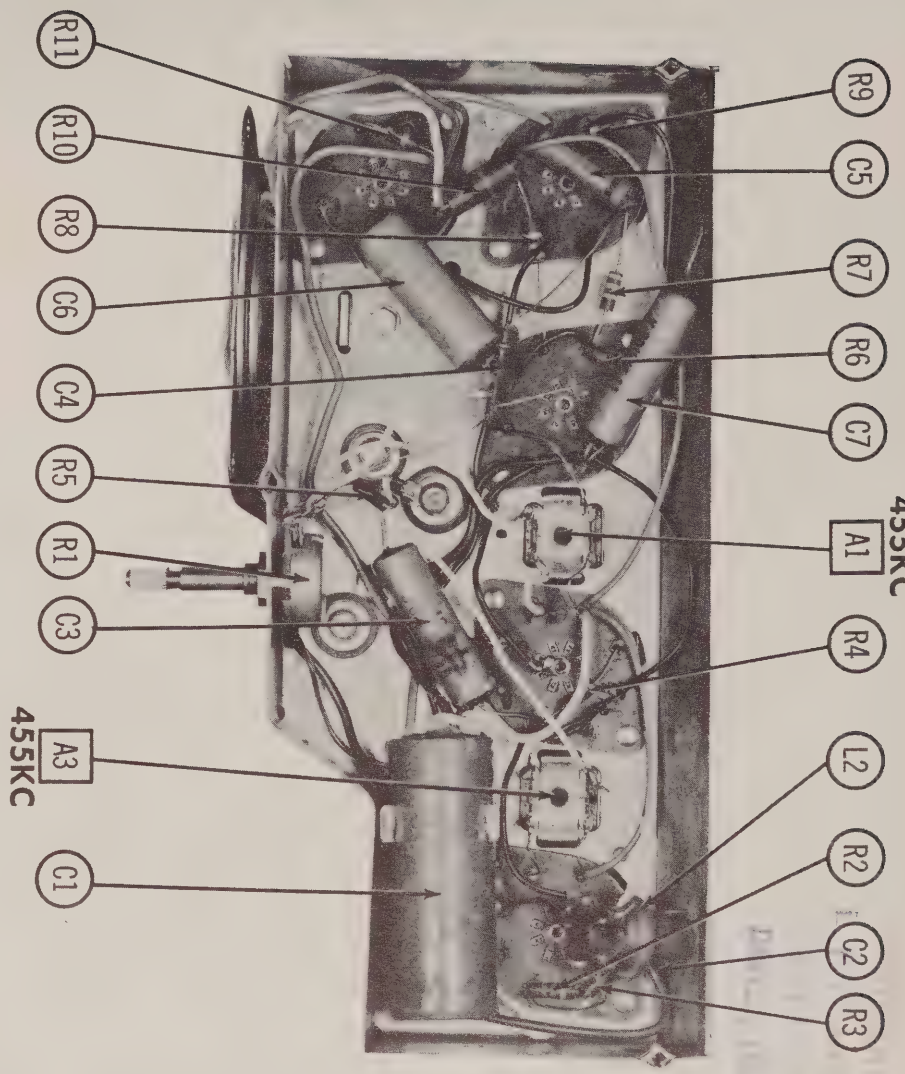
ITEM No.	USE	DC RES.		REPLACEMENT DATA			NOTES
		PRI.	SEC.	General Electric PART No.	MERIT PART No.	MILLER PART No.	
L1	Lopp Ant.	3Ω		RAB-150 *			Part # includes cabinet back
L2	Osc. Coil	.5Ω	6.5Ω	RLC-118	BC-381 ■	70-OSC ▲	
L3	Input IF	13.5Ω	13.5Ω	RTL-135	BC-352	12-C1	
L4	Output IF	13.5Ω	13.5Ω	RTL-135	BC-353	12-C2	

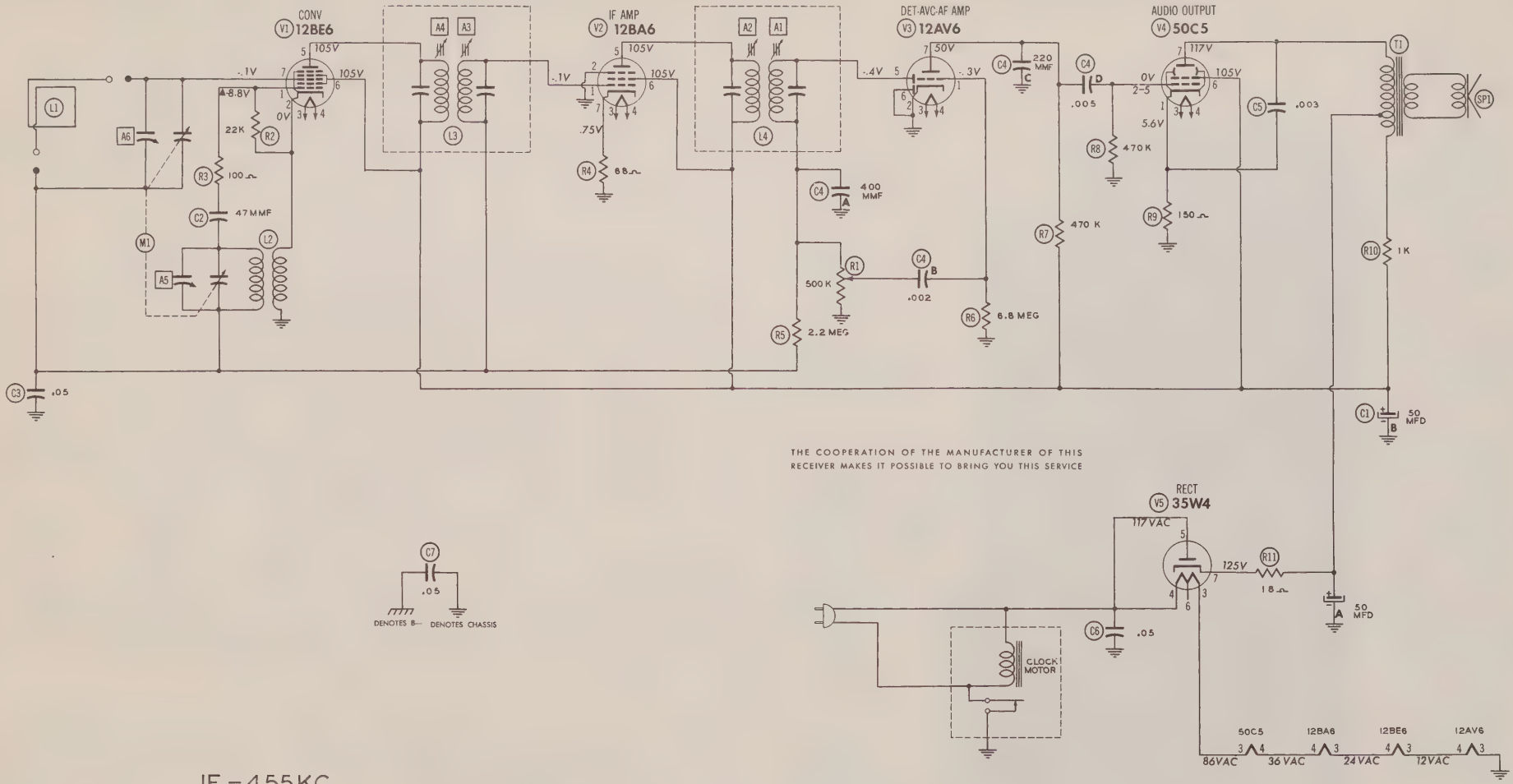
▲ Do not use tap on Secondary winding.
* Part # for Models 542 & 543, Model 514 uses part #RAB-151 in this application.
■ Do not use tap on secondary winding, drill mounting hole.

MISCELLANEOUS

ITEM No.	PART NAME	General Electric PART No.	NOTES
M1	Tuning Capacitor	RTC062	36-463MMF, 20-153MMF
	Cabinet	RAU-338	Brown Plastic for Model 542
	Cabinet	RAU-339	Ivory Plastic for Model 543
	Cabinet	RAU-348	Mahogany Plastic for Model 514
	Cabinet Back	RAB-151	Includes Loop Ant. for Model 514
	Cabinet Back	RAB-150	Includes Loop Ant. for Models 542 and 543
	Knob	RDK-230	Ivory-Volume for Models 542 and 543
	Knob	RDK-243	Fawn-Volume for Model 514
	Dial	RDK-246	Tuning Dial for Model 514
	Dial	RDK-285	Tuning Dial for Models 542 and 543
	Clock Assembly	RZC-021	Models 542 and 543
	Clock Assembly	RZC-022	Model 514

CHASSIS—BOTTOM VIEW





IF = 455KC

RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7
V 1	12BE6	22KΩ	.5Ω	12Ω	24Ω	† 1KΩ	† 1KΩ	2.7Meg
V 2	12BA6	2.7Meg	0Ω	24Ω	36Ω	† 1KΩ	† 1KΩ	68Ω
V 3	12AV6	6.8Meg	0Ω	0Ω	12Ω	500KΩ	0Ω	† 470KΩ
V 4	50C5	150Ω	470KΩ	86Ω	36Ω	470KΩ	† 1KΩ	† 250Ω
V 5	35W4	† 18Ω	† 24Ω	86Ω	120Ω	120Ω	110Ω	150KΩ

† MEASURED FROM PIN 7 OF V5.
▲ MEASURED WITH VTVM.

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1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1,000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ± 10% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.

GROMMES MODEL 215BA

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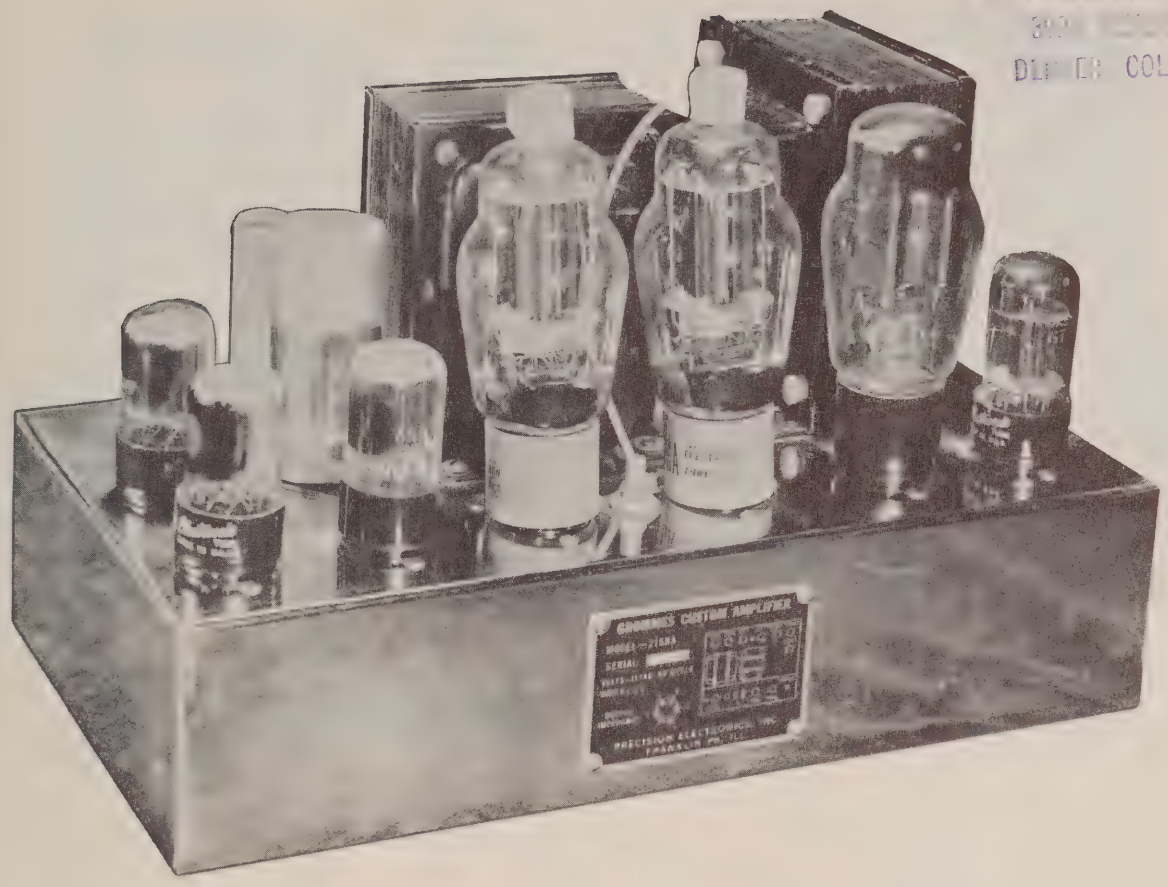
DENVER COLORADO

GROMMES MODEL 215BA



GROMMES MODEL 215BA

TRADE NAME	Grommes Model 215BA
MANUFACTURER	Precision Electronics Inc., Franklin Park, Ill.
TYPE SET	AC Operated Audio Amplifier
TUBES (Seven)	Types 6SN7GT AF Amp.-Phase Inv., 6SN7GT AF Amp., 6SN7GT Driver, (2) 807 Audio Output, 6X5GT Bias Rectifier, 5U4G Rectifier
POWER SUPPLY	110-120 Volts AC-60 Cycle RATING 1.2 Amp. @ 117 Volts AC

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PARTS LIST AND DESCRIPTIONS

GROMMES MODEL 215BA

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA: GROMMES PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RTMA BASE TYPE	INSTALLATION NOTES
V1	AF Amplifier-Phase Inverter	6SN7GT	6SN7GT	8BD	
V2	AF Amplifier	6SN7GT	6SN7GT	8BD	
V3	Driver	6SN7GT	6SN7GT	8BD	
V4	Audio Output	807	807	5AW	
V5	Audio Output	807	807	5AW	
V6	Bias Rectifier	6X5GT	6X5GT	6S	
V7	Rectifier	5U4G	5U4G	5T	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: GROMMES PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	MALLORY PART No.	SPRAGUE PART No.	NOTES
C1A	▲40	450		AFH3-42		C033		FP430.2	TVL-3843	
B	■20	450								
C	▲20	450								
C2	20	100		BT350-20		BR2015A		BS45	TVA-1410	
C3A	10	350		AFH3-27		C021		FP330.5	TVL-3776	
B	▲10	350								
C	■10	350								
C4	20	25		PRS25/25		BR202A		TC26	TVA-1205	
C5	63	500								Note 1
C6	.1	600		P688-1	DF-104	PTE6P1		PT601	6TM-P1	
C7	.1	600		P688-1	DF-104	PTE6P1		PT601	6TM-P1	
C8	.1	600		P688-1	DF-104	PTE6P1		PT601	6TM-P1	
C9	.1	600		P688-1	DF-104	PTE6P1		PT601	6TM-P1	
C10	62	500								Note 1

Note 1. Some Models use 68MMF in this application.

CONTROLS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: GROMMES PART No.	IRC PART No.	CLAROSTAT PART No.	CENTRALAB PART No.	MALLORY PART No.	INSTALLATION NOTES
R1	50Ω	2	C40PX					Balance - Wire Wound

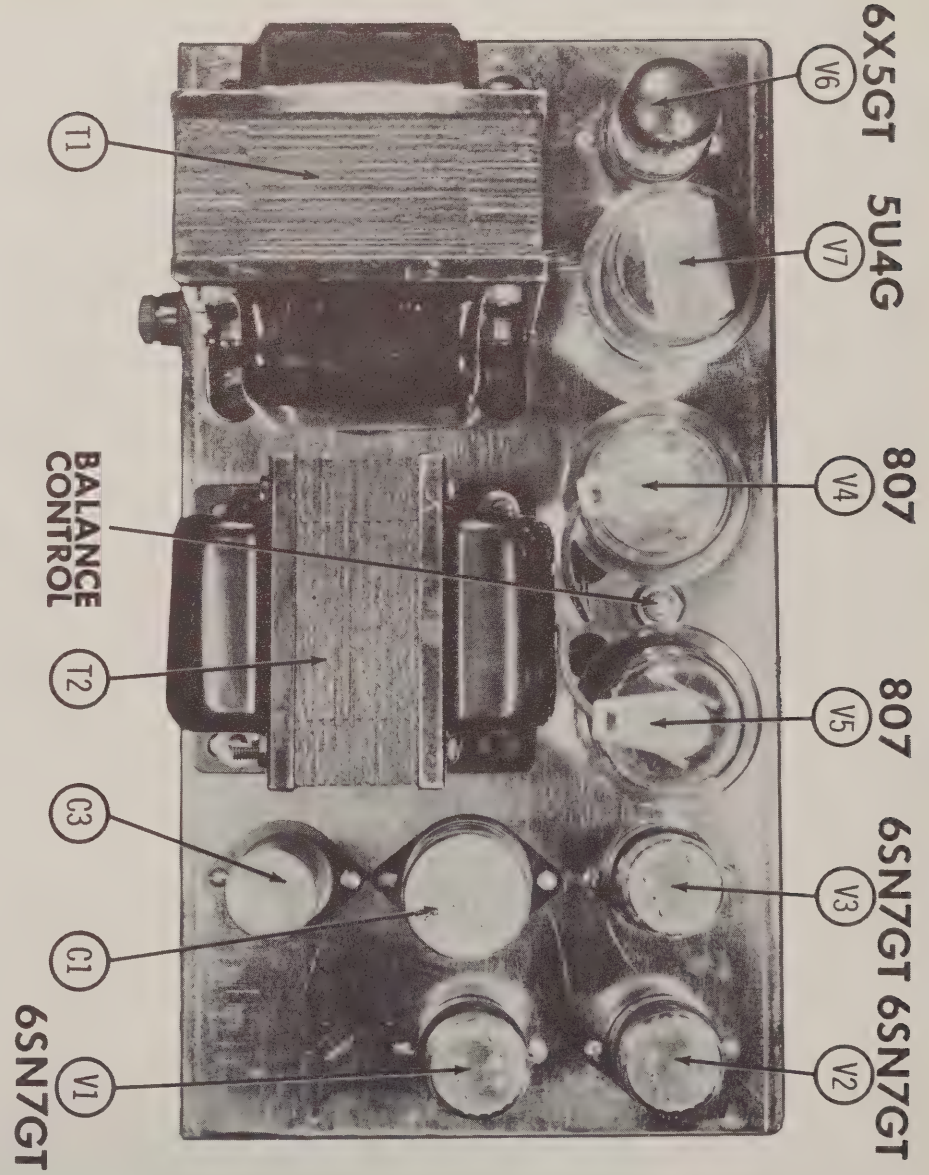
RESISTORS

ITEM No.	RATING: OHMS	RATING: WATT	REPLACEMENT DATA: GROMMES PART No.	REPLACEMENT DATA: IRC PART No.	NOTES
R2	470KΩ	½		BTS-470K	
R3	1000Ω	½		BTS-1000	
R4	1000Ω	½		BTS-1000	
R5	27KΩ	½		BTS-27K	
R6	6800Ω	½		BTS-6800	
R7	3300Ω	½		BTS-3300	
R8	27KΩ	1		BTA-27K	Note 1
R9	100KΩ	1		BTA-100K	Note 2
R10	27KΩ	1		BTA-27K	Note 1
R11	27KΩ	½		BTS-27K	
R12	2700Ω	1		BTA-2700	
R13	1 Meg	½		BTS-1 Meg	Note 3
R14	1000Ω	½		BTS-1000	Note 4
R15	1000Ω	½		BTS-1000	Note 4
R16	4700Ω	½		BTS-4700	
R17	1000Ω	½		BTS-1000	Note 4
R18	1000Ω	½		BTS-1000	Note 4
R19	1 Meg	½		BTS-1 Meg	Note 3
R20	100KΩ	1		BTA-100K	Note 2
R21	100KΩ	1		BTA-100K	Note 2
R22	10KΩ	1		BTA-10K	

ITEM No.	RATING: OHMS	RATING: WATT	REPLACEMENT DATA: GROMMES PART No.	REPLACEMENT DATA: IRC PART No.	NOTES
R23	47KΩ	1		BTA-47K	
R24	10KΩ	1		BTA-10K	
R25	47KΩ	1		BTA-47K	
R26	5600Ω	2		BTB-5600	
R27	220KΩ	2		BTB-220K	Note 5
R28	220KΩ	2		BTB-220K	Note 5
R29	1000Ω	½			
R30	100KΩ	½		BTS-100K	Note 6
R31	100Ω	1			
R32	50Ω	5		1 3/4A-50	
R33	100KΩ	½		BTS-100K	Note 6
R34	1000Ω	½			
R35	100Ω	1			
R36	220KΩ	2		BTB-220K	Note 5
R37	220KΩ	2		BTB-220K	Note 5
R38	5000Ω	5		1 3/4A-5000	
R39	10KΩ	1		BTA-10K	
R40	20KΩ	1			
R41	68KΩ	2		BTB-68K	
R42	220KΩ	1		BTA-220K	
R43	10KΩ	1		BTA-10K	

Note 1. Resistors matched within 2% tolerance.
Note 2. Resistors matched within 2% tolerance.
Note 3. Resistors matched within 5% tolerance.
Note 4. Resistors matched within 2% tolerance.
Note 5. Resistors matched within 2% tolerance.
Note 6. Resistors matched within 2% tolerance.

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

TRANSFORMER (POWER)

ITEM No.	RATING				REPLACEMENT DATA				
	PRI.	SEC. 1	SEC. 2	SEC. 3	GROMMES PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	TRIAD PART No.
T1	117VAC @ 1.2A	800VCT .120ADC	5VAC @ 3A	6.3VCT @ 4.3A		PC-8413		PV-200 ①	R-21A ①

① Drill new mounting holes.

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	RATING				REPLACEMENT DATA					NOTES
	IMPEDANCE		DC RES.		GROMMES PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	TRIAD PART No.	
	PRI.	SEC.	PRI.	SEC.						
T2	5KΩCT	16Ω tap @ 8Ω	160Ω CT	.8Ω tap @ .65Ω		A-8053	P-3100 ①	PCO-80	S-35A ①	① Drill new mounting holes.

FILTER CHOKE

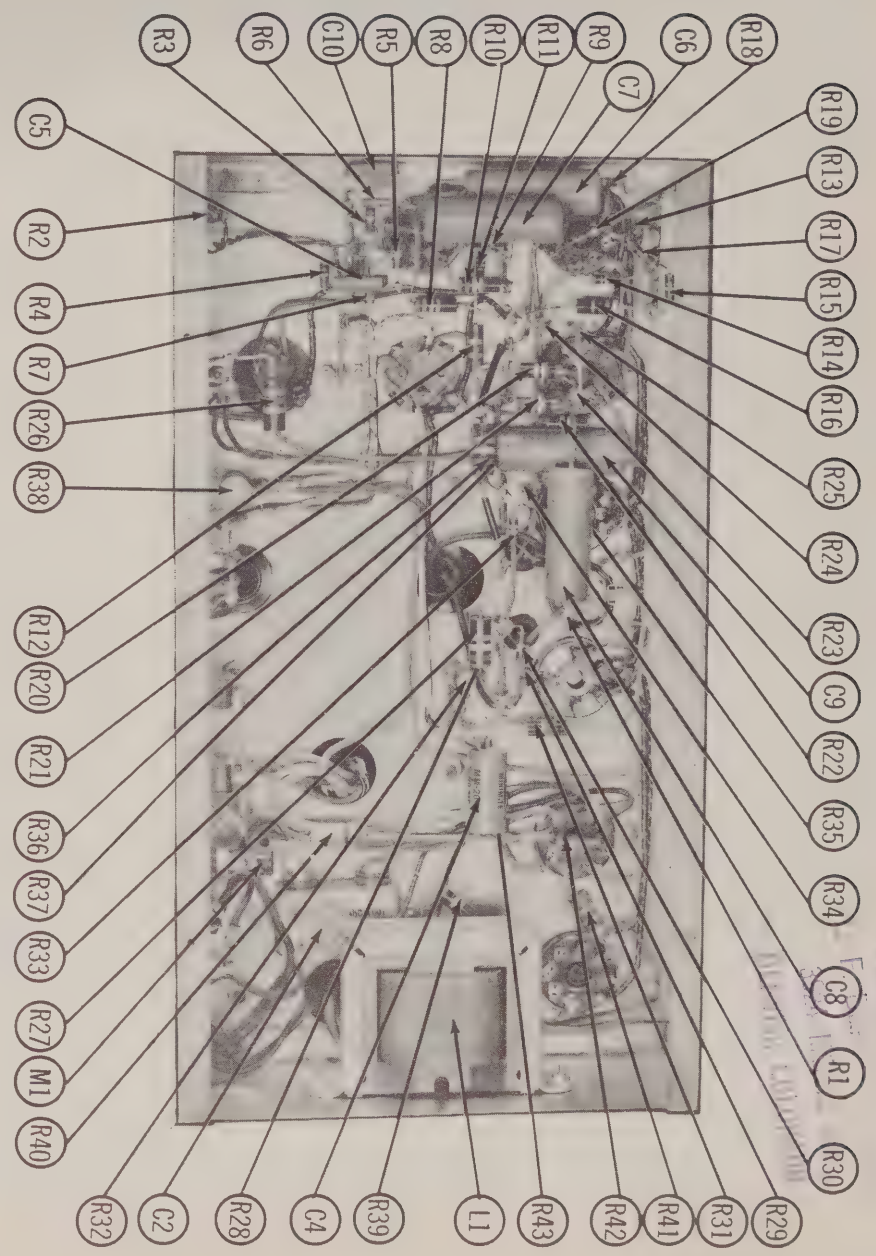
ITEM No.	RATINGS			REPLACEMENT DATA				
	TOTAL DIRECT CURRENT	D.C. RESISTANCE	INDUCTANCE (0 CURRENT 1000 ∿)	GROMMES PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	TRIAD PART No.
L1	.120A	53.8Ω	1.98 Hy.		C-2325 ①	A-2991	TR-1733 ①	C-21X ①

① Drill one new mounting hole.

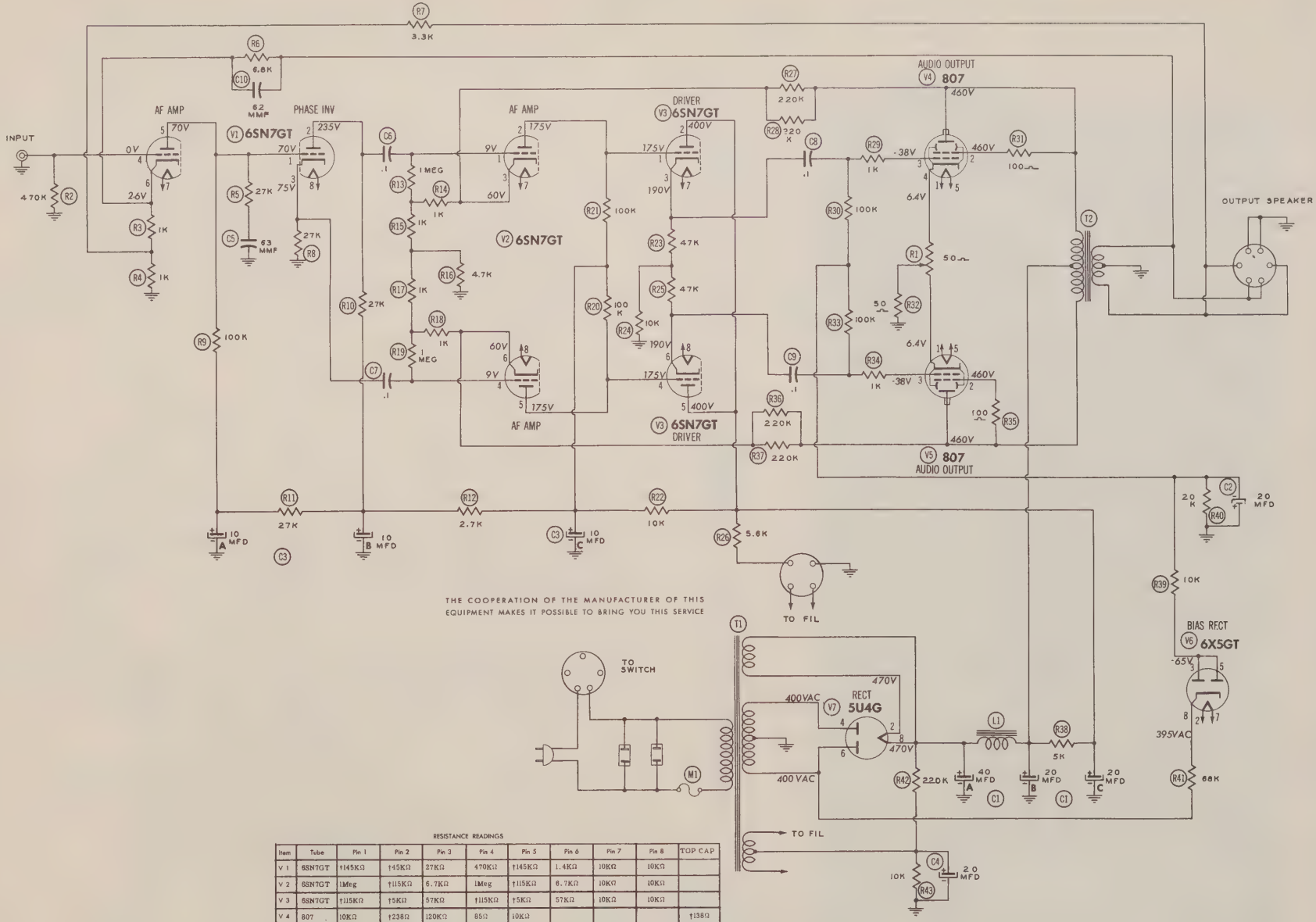
FUSES

ITEM No.	TYPE	RATING	REPLACEMENT DATA					
			GROMMES PART No.		LITTELFUSE PART No.		BUSS PART No.	
			FUSE	HOLDER	FUSE	HOLDER	FUSE	HOLDER
M1	AGC	3A 250V.			312003	342001	AGC 3	HKP

CHASSIS—BOTTOM VIEW



GROMMES MODEL 215BA



RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	TOP CAP
V 1	6SN7GT	†145KΩ	†45KΩ	27KΩ	470KΩ	†145KΩ	1.4KΩ	10KΩ	10KΩ	
V 2	6SN7GT	1Meg	†115KΩ	6.7KΩ	1Meg	†115KΩ	6.7KΩ	10KΩ	10KΩ	
V 3	6SN7GT	†115KΩ	†5KΩ	57KΩ	†115KΩ	†5KΩ	57KΩ	10KΩ	10KΩ	
V 4	807	10KΩ	†238Ω	120KΩ	85Ω	10KΩ				†138Ω
V 5	807	10KΩ	†220Ω	120KΩ	70Ω	10KΩ				†120Ω
V 6	6X5GT	INF	10KΩ	30KΩ	INF	30KΩ	INF	10KΩ	68KΩ	
V 7	5U4G	INF	35KΩ	INF	38Ω	10KΩ	35Ω	†54Ω	35KΩ	

† MEASURED FROM PIN 8 OF V7

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1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ± 15% in voltage and resistance readings.
6. Are controls at minimum proper output load connected.

HUDSON ELECTRONICS MODEL 324H

PROPERTY OF
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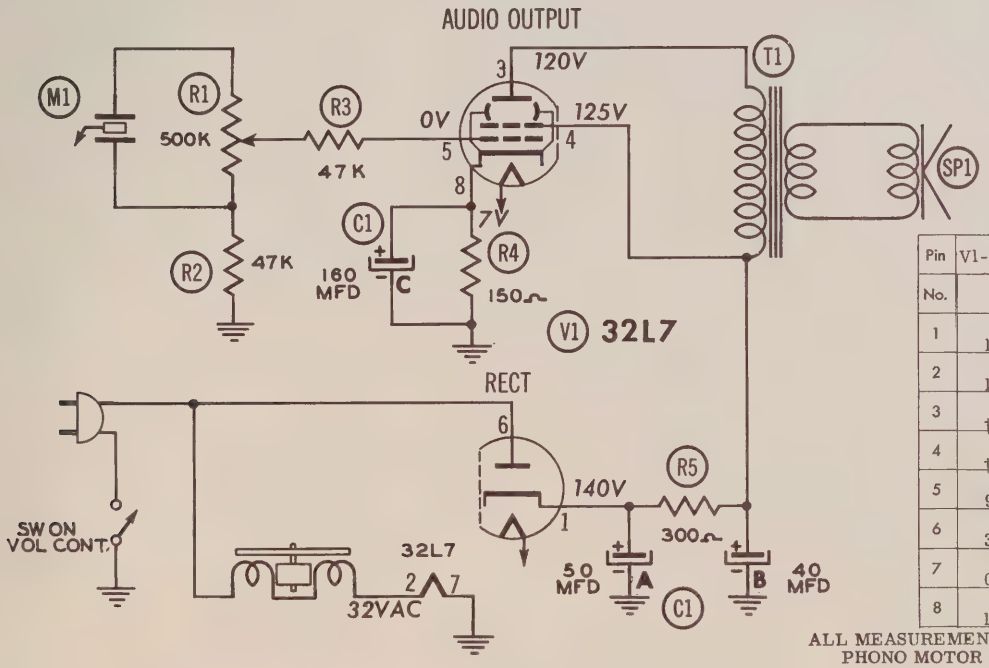
324H
D[illegible]

HUDSON ELECTRONICS MODEL 324H

HUDSON ELECTRONICS MODEL 324H

TRADE NAME	Hudson Model 324H
MANUFACTURER	Hudson Electronic Corp., 110 E. Third St., Mt. Vernon, New York
TYPE SET	AC Operated Audio Amplifier with 3 Speed Manual Record Player
TUBES (One)	32L7GT Audio Output - Rect.
POWER SUPPLY	110-120 Volts AC-60 Cycle
RATING	.37 Amp.@ 117 Volts AC



Pin No.	V1-32L7GT Res.
1	180KΩ
2	15Ω
3	† 436Ω
4	† 300Ω
5	94KΩ
6	36Ω
7	0Ω
8	150Ω

ALL MEASUREMENTS TAKEN WITH PHONO MOTOR CONNECTED.
† MEASURED FROM PIN 1 OF V1.

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PARTS LIST AND DESCRIPTIONS

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA		RTMA BASE TYPE	INSTALLATION NOTES
		HUDSON PART No.	STANDARD REPLACEMENT		
V1	Audio Output	32L7GT	32L7GT	8F	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING		REPLACEMENT DATA							NOTES
	CAP.	VOLT	HUDSON PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	MALLORY PART No.	SPRAGUE PART No.	
C1A	▪50	150		AFH4-32		D-27		FP456.5	TVL-3706	
B	▪40	150								
C	▲160	25								

CONTROLS

ITEM No.	RATING		REPLACEMENT DATA					INSTALLATION NOTES
	RESISTANCE	WATTS	HUDSON PART No.	IRC PART No.	CLAROSTAT PART No.	CENTRALAB PART No.	MALLORY PART No.	
R1A	500KΩ	½		Q13-133	AG-60-Z	B-60-S	U-48	Volume
B	Shaft			Not Req.	FS-3	Not Req.	Not Req.	Attach to R1A
C	Switch			76-1	SWB	Not Req.	US-26	Attach to R1A

RESISTORS

ITEM No.	RATING		REPLACEMENT DATA		NOTES
	OHMS	WATT	HUDSON PART No.	IRC PART No.	
R2	47KΩ	1½		BTS-47K	
3	47KΩ	1½		BTS-47K	

ITEM No.	RATING		REPLACEMENT DATA		NOTES
	OHMS	WATT	HUDSON PART No.	IRC PART No.	
4	150Ω	½		BTS-150	
5	300Ω	5		1-3/4A-300	

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	RATING				REPLACEMENT DATA					NOTES
	IMPEDANCE		DC RES.		HUDSON PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	TRIAD PART No.	
	PRI.	SEC.	PRI.	SEC.						
T1	2.4KΩ	3.2Ω	136Ω	.38Ω		A-3332 ①	A3025 ①	R0-2 ①	S-2X ①	① Bend mounting tabs down, file out slots, mount on original mounting brackets.

SPEAKER

ITEM No.	RATINGS			REPLACEMENT DATA			NOTES
	SIZE	FIELD	V. C. IMP.	HUDSON PART No.	JENSEN PART No.	QUAM PART No.	
SP1	5"	PM	3.2Ω		ST-105 Mod. P5-X	5A07	

PHONO CARTRIDGE

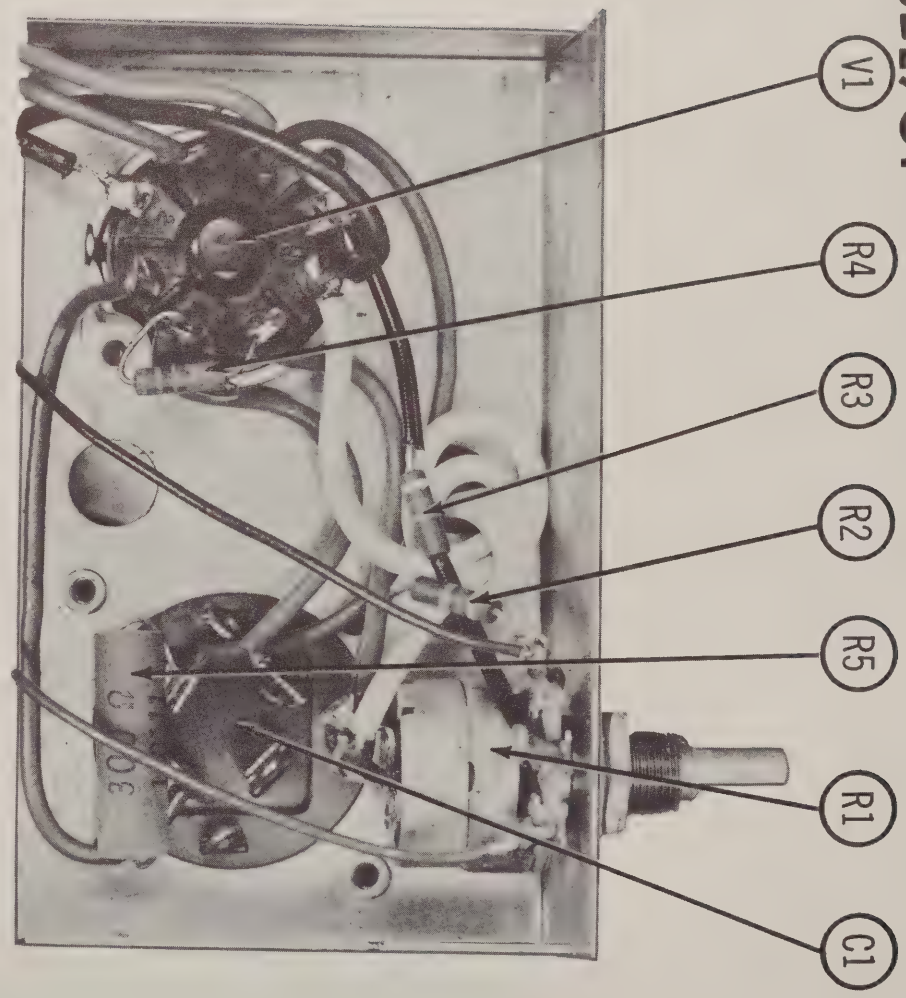
ITEM No.	REPLACEMENT DATA							REMARKS
	HUDSON PART No.	ASTATIC PART No.		SHURE PART No.		ELECTRO-VOICE PART No.		
		CARTRIDGE	NEEDLE	CARTRIDGE	NEEDLE	CARTRIDGE	NEEDLE	
M1						*25H60		* Tone Arm

PHONO NEEDLE

(FOR REPLACEMENT IN ORIGINAL EQUIPMENT CARTRIDGE)

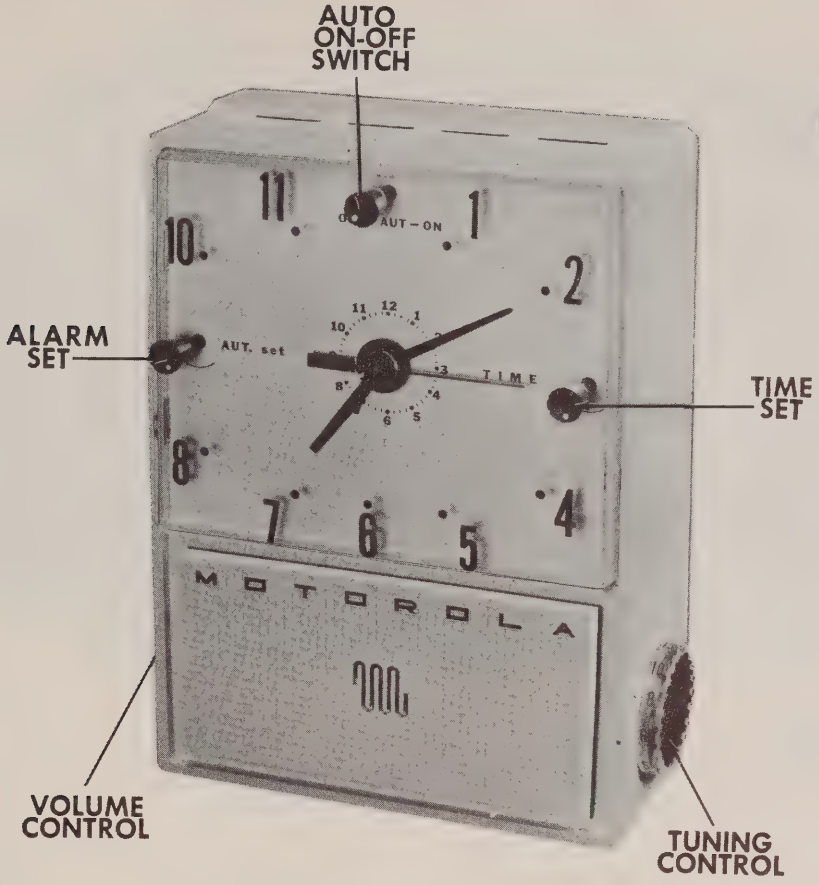
ITEM No.	REPLACEMENT DATA			REMARKS
	HUDSON PART No.	WALCO PART No.	JENSEN PART No.	
M2		W-14AGA	W-422	

CHASSIS—BOTTOM VIEW



MOTOROLA MODELS 52CW1, 52CW2, 52CW3, 52CW4 (Ch. HS-329)

MOTOROLA MODELS 52CW1, 52CW2, 52CW3, 52CW4 (Ch. HS-329)



MOTOROLA MODELS 52CW1, 52CW2, 52CW3, 52CW4 (Ch. HS-329)

TRADE NAME	Motorola Models 52CW1, 52CW2, 52CW3, 52CW4 (Ch. HS-329)
MANUFACTURER	Motorola Inc., 4545 Augusta Blvd., Chicago 51, Ill.
TYPE SET	AC Operated AM Superheterodyne Receiver With Electric Clock
TUBES (Five)	Types 12BE6 Conv., 12BD6 IF Amp., 12AT6 Det-AVC-AF Amp., 50C5 Audio Output, 35W4 Rectifier
POWER SUPPLY	110-120 Volts AC-60 Cycle — RATING .22 Amp @ 117 Volts AC
TUNING RANGE—BROADCAST	535-1620KC

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

Use isolation transformer, if available. If not, connect a .1MFD capacitor in series with low side of signal generator and B-. Volume control should be at maximum position. Output of signal generator should be no higher than necessary to obtain an output reading. Use an insulated alignment screwdriver for adjusting.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
1.	.1MFD	High side to pin 7 (grid) of 12BE6 (V1). Low side to B-.	455KC (400~Mod)	Tuning gang fully open.	Across voice coil.	A1, A2, A3, A4	Adjust for maximum output. If isolation transformer is not used, reduce dummy antenna to .001MFD to reduce hum modulation.
2.	"	"	1620 KC	"	"	A5	"
3.		Loop	1400KC	Tune to 1400KC signal.	"	A6	Fashion loop of several turns of wire and radiate signal into loop of receiver. Adjust for maximum output.

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PARTS LIST AND DESCRIPTIONS

MOTOROLA
MODEL 52CW1 (Ch. HS-329)

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA		RTMA BASE TYPE	INSTALLATION NOTES
		MOTOROLA PART No.	STANDARD REPLACEMENT		
V1	Converter	12BE6	12BE6	7CH	
V2	IF Amplifier	12BD6	12BD6	7BK	
V3	Det.-AVC-AF Amp	12AT6	12AT6	7BT	
V4	Audio Output	50C5	50C5	7CV	
V5	Rectifier	35W4	35W4	5BQ	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING		REPLACEMENT DATA							NOTES
	CAP.	VOLT	MOTOROLA PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	MALLORY PART No.	SPRAGUE PART No.	
C1A	50	150	23B600855	PRS150/50-30		EDL5315		2N520	TVA-2450	Red
B	30	150								Green
C2	.05	200	8R9821	P288-05	DF-503	PJ2S5		PT415	2TM-S5	
C3A	220			SI220	D6-221	5W5T25	GP2K-221	UC-5322		
B	2000		21B482847	BPD-002	DD-202	TM5D2	801-002	DC-522	34C3	
C	220			SI220	D6-221	5W5T25	GP2K-221	UC-5322		
D	5000			BPD-005	DD-502	TM5D5	811-005	DC-525		
C4	10000		21R482726	BPD-01	DD-103	TM5S1	821-01	DC-511	5HK-S1	
C5	..05	400	8R9816	P388-05	DF-503	PTE4S5		PT415	4TM-S5	
C6	.15	200	8K72686	P288-15		PTE4P15		TP417	2TM-P15	

CONTROLS

ITEM No.	RATING		REPLACEMENT DATA					INSTALLATION NOTES
	RESISTANCE	WATTS	MOTOROLA PART No.	IRC PART No.	CLAROSTAT PART No.	CENTRALAB PART No.	MALLORY PART No.	
R1A	1Meg	½	18A620719	Q13-137	AG-63-Z	B-70	U-53	Volume
B	Shaft		Not Req.	Not Req.	FS-3	Not Req.	Not Req.	Attach to R1A

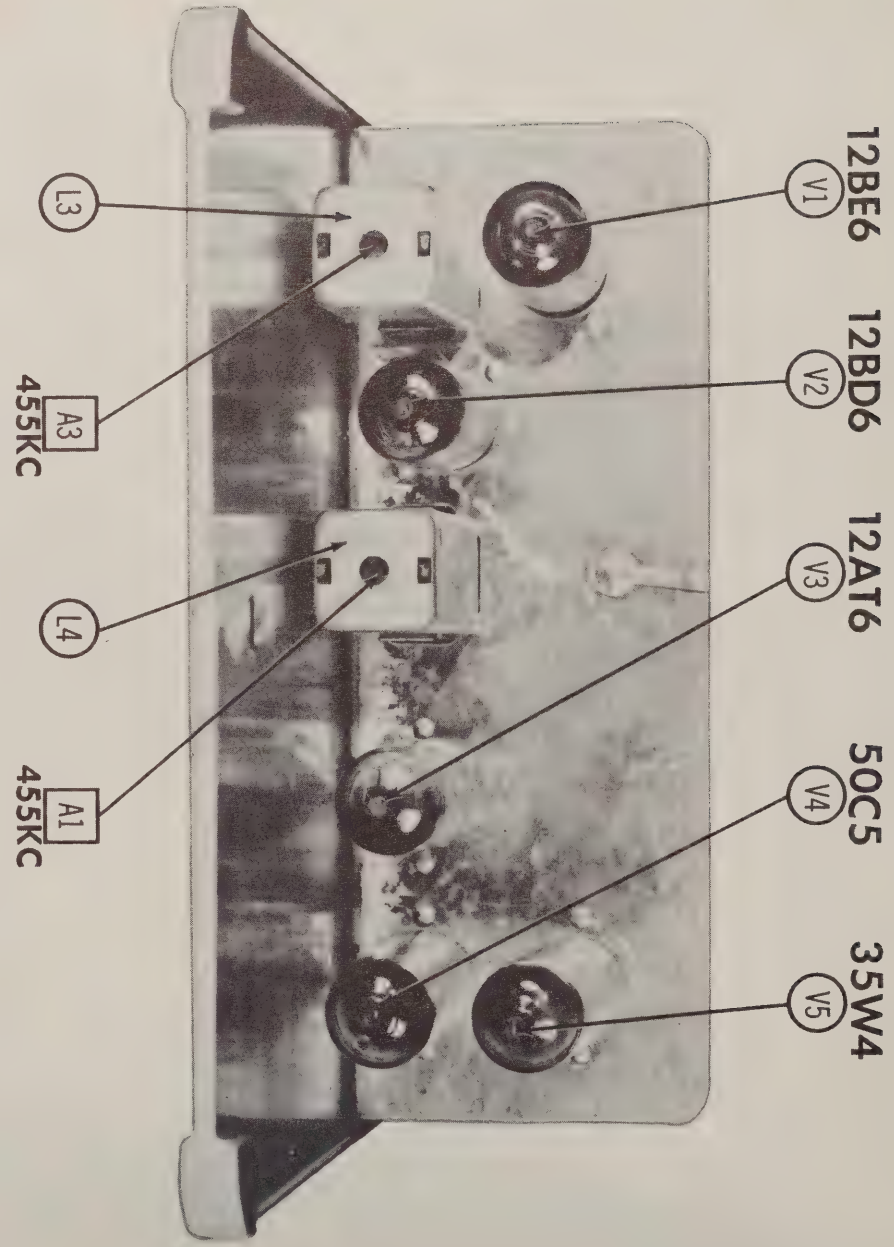
RESISTORS

ITEM No.	RATING		REPLACEMENT DATA		NOTES
	OHMS	WATT	MOTOROLA PART No.	IRC PART No.	
R2	22KΩ	½	6R6028	BTS-22K	
R3	68Ω	½	6R2039		
R4	2.2Meg	½	6R3927	BTS-2.2Meg	
R5	10Meg	½	6R2109	BTS-10Meg	
R6	220KΩ	½	6R6015	BTS-220K	

ITEM No.	RATING		REPLACEMENT DATA		NOTES
	OHMS	WATT	MOTOROLA PART No.	IRC PART No.	
R7	470KΩ	½	6R6032	BTS-470K	
R8	150Ω	½	6R6373	BTS-150	
R9	1000Ω	1	6R6327	BTA-1000	
R10	33Ω	½			Note

Note: Some Models use 27Ω in this application.

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	RATING				REPLACEMENT DATA					NOTES
	IMPEDANCE		DC RES.		MOTOROLA PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	TRIAD PART No.	
	PRI.	SEC.	PRI.	SEC.						
T1	2.5KΩ	3.4Ω	250Ω	.58Ω	25C620715	A-3332	A-3025	RO-2 ①	S-1X ①	① Drill one new mounting hole.

SPEAKER

ITEM No.	RATINGS			REPLACEMENT DATA			NOTES
	SIZE	FIELD	V. C. IMP.	MOTOROLA PART No.	VIKING PART No.	QUAM PART No.	
SP1	3½"	PM	3.4Ω	50B620714 50B620713 ①	35J4	3A07	① Alternate PM Speaker

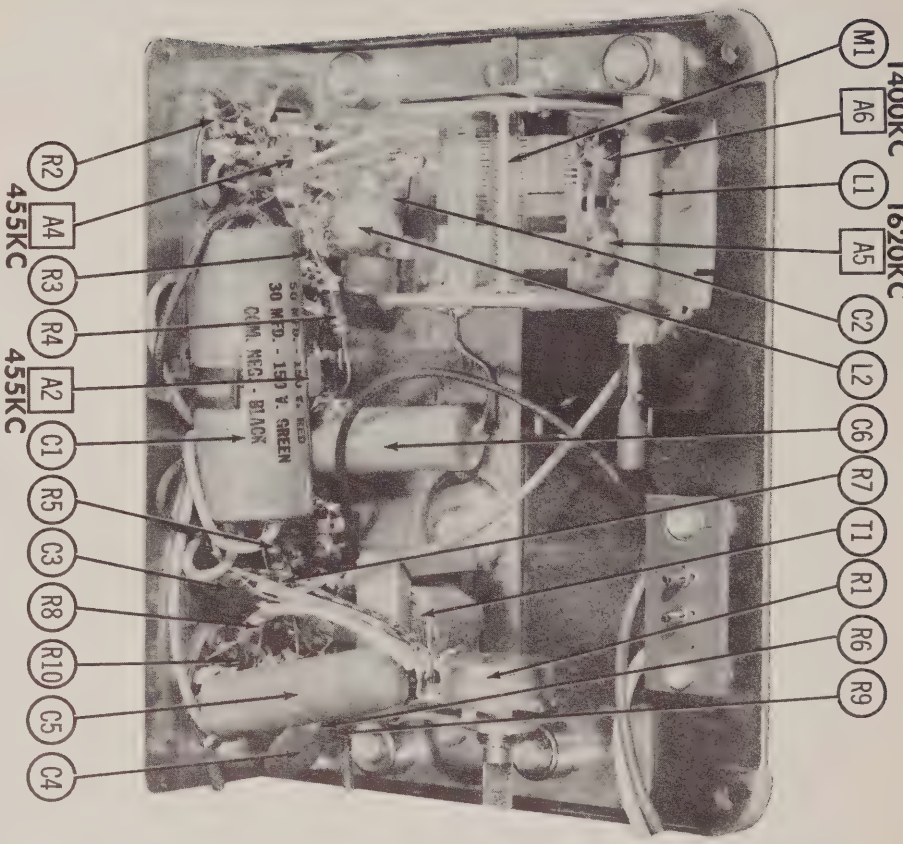
COILS (RF-IF)

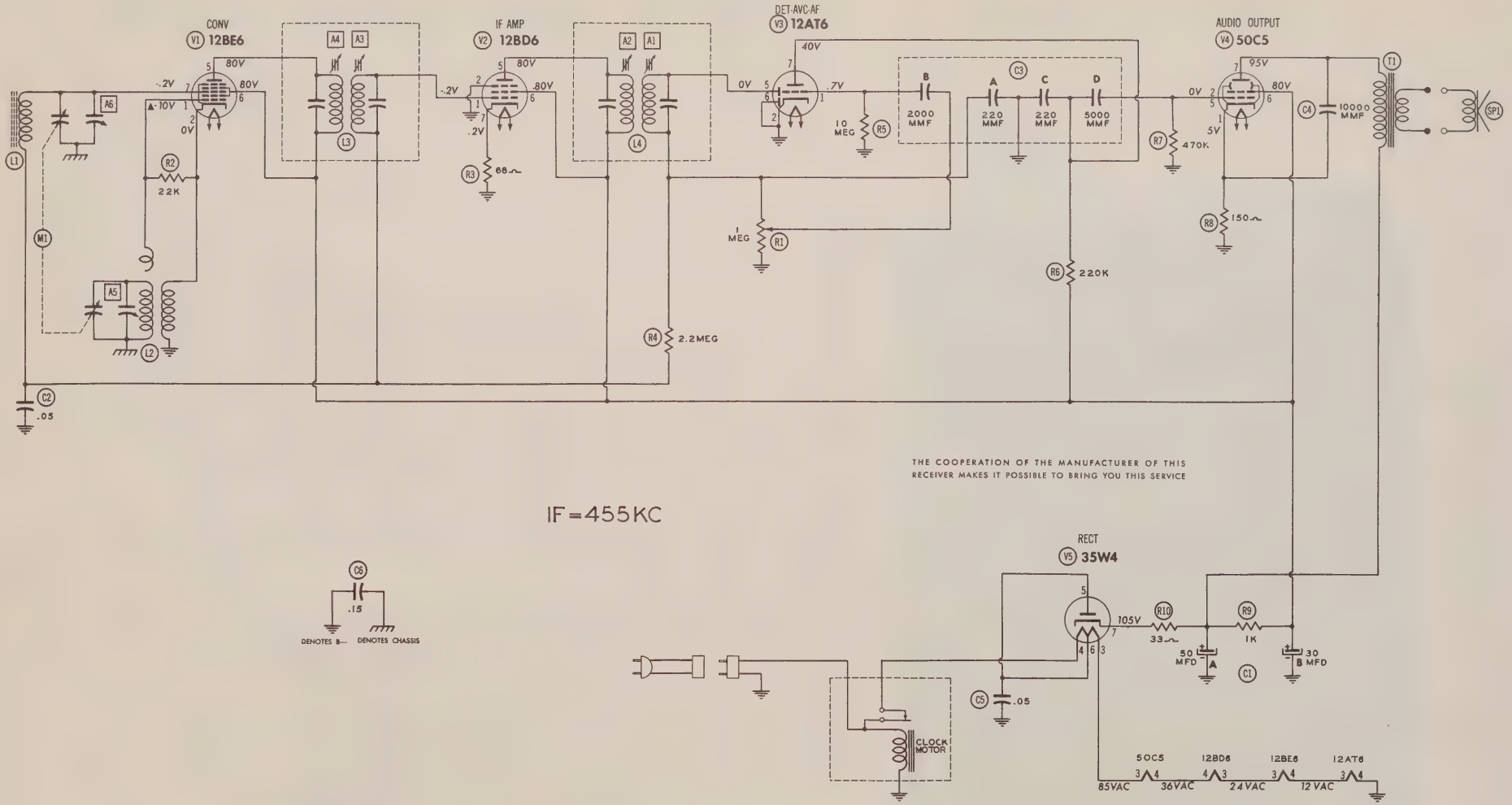
ITEM No.	USE	DC RES.		REPLACEMENT DATA		NOTES
		PRI.	SEC.	MOTOROLA PART No.	MERIT PART No.	
L1	Loop Ant.	3.5Ω		24K620703		
L2	Osc. Coil	1.2Ω	1Ω	24B680364		
L3	Input IF	17Ω	16.5Ω	24C485553	BC-352	
L4	Output IF	17Ω	16.5Ω	24C485553	BC-353	

MISCELLANEOUS

ITEM No.	PART NAME	MOTOROLA PART No.	NOTES
M1	Tuning Capacitor Electric Clock	19B620710	30-243MMF, 16-112MMF
	Assy.	72D620276	Complete
	Cabinet	1V621298	Model 52CW1 (Yellow)
	Cabinet	1V621312	Model 52CW2 (White)
	Cabinet	1V621313	Model 52CW3 (Green)
	Cabinet	1V621314	Model 52CW4 (Red)
	Cover, Cabinet Back	15K620285	Model 52CW1 (Yellow)
	Cover, Cabinet Back	15K620286	Model 52CW2 (White)
	Cover, Cabinet Back	15K620287	Model 52CW3 (Green)
	Cover, Cabinet Back	15K620288	Model 52CW4 (Red)
	Knob, Clock Control	36B620717	Black (3 Used)
	Knob, Tuning	36C620718	
	Knob, Volume	36K620297	
	Scale, Clock Dial	34C620284	Plastic

CHASSIS—BOTTOM VIEW





RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7
V 1	12BE6	22KΩ	1.3Ω	32Ω	16Ω	†1050Ω	†1000Ω	3.2Meg
V 2	12BD6	3.2Meg	0Ω	32Ω	42Ω	†1050Ω	†1000Ω	68Ω
V 3	12AT6	10 Meg	0Ω	15Ω	0Ω	1 Meg	0Ω	† 220KΩ
V 4	50C5	150Ω	470KΩ	87Ω	42Ω	470KΩ	†1000Ω	† 280Ω
V 5	35W4	200KΩ	INF	87Ω	120Ω	110Ω	110Ω	200KΩ

† MEASURED FROM PIN 7 OF V5
▲ TAKEN WITH VACUUM TUBE VOLTMETER

A PHOTOFACT STANDARD NOTATION SCHEMATIC

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198-10

1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1,000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ± 10% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.

PHOTOFACT* Folder

*TRADE MARK

PACIFIC MERCURY MODELS 2081, 2181
(Ch. 150-4, -31, -61 & Radio Ch. 155)

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MODEL 2181

PACIFIC MERCURY MODELS 2081, 2181
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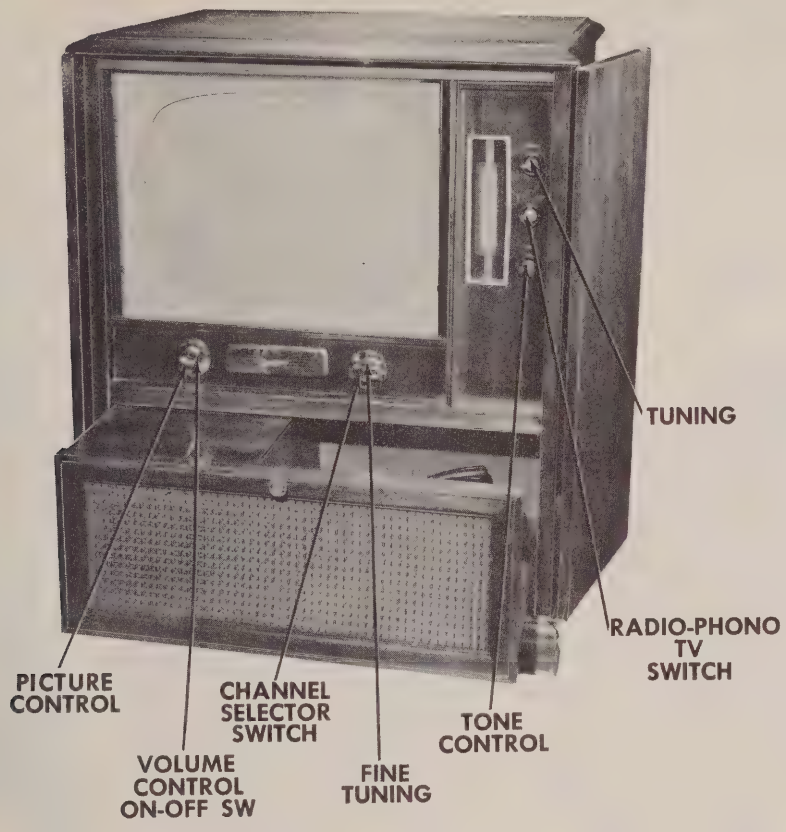
PACIFIC MERCURY MODELS 2081, 2181 (Ch. 150-4, -31, -61 & Radio Ch. 155)



MERCURY 2181

TRADE NAME	Mercury Models 2081, 2181 (Ch. 150-4, 150-31, 150-61) Radio Ch. 155
MANUFACTURER	Pacific Mercury Tel. Mfg. Corp., 5955 Van Nuys Blvd., Van Nuys, Calif.
TYPE SET	TV-Radio-Phono Combination
TUBES	Twenty-three
POWER SUPPLY	110-120 Volts AC-60 Cycle RATING 1.83 Amp. @ 117 Volts AC
TUNING RANGE	(TV) Channels 2 thru 13, Sound IF 26.1MC, Sound IF 21.6MC (Intercarrier), 540-1850KC (Radio)

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PACIFIC MERCURY MODELS 2081, 2181 (Ch. 150-4, -31, -61 & Radio Ch. 155)

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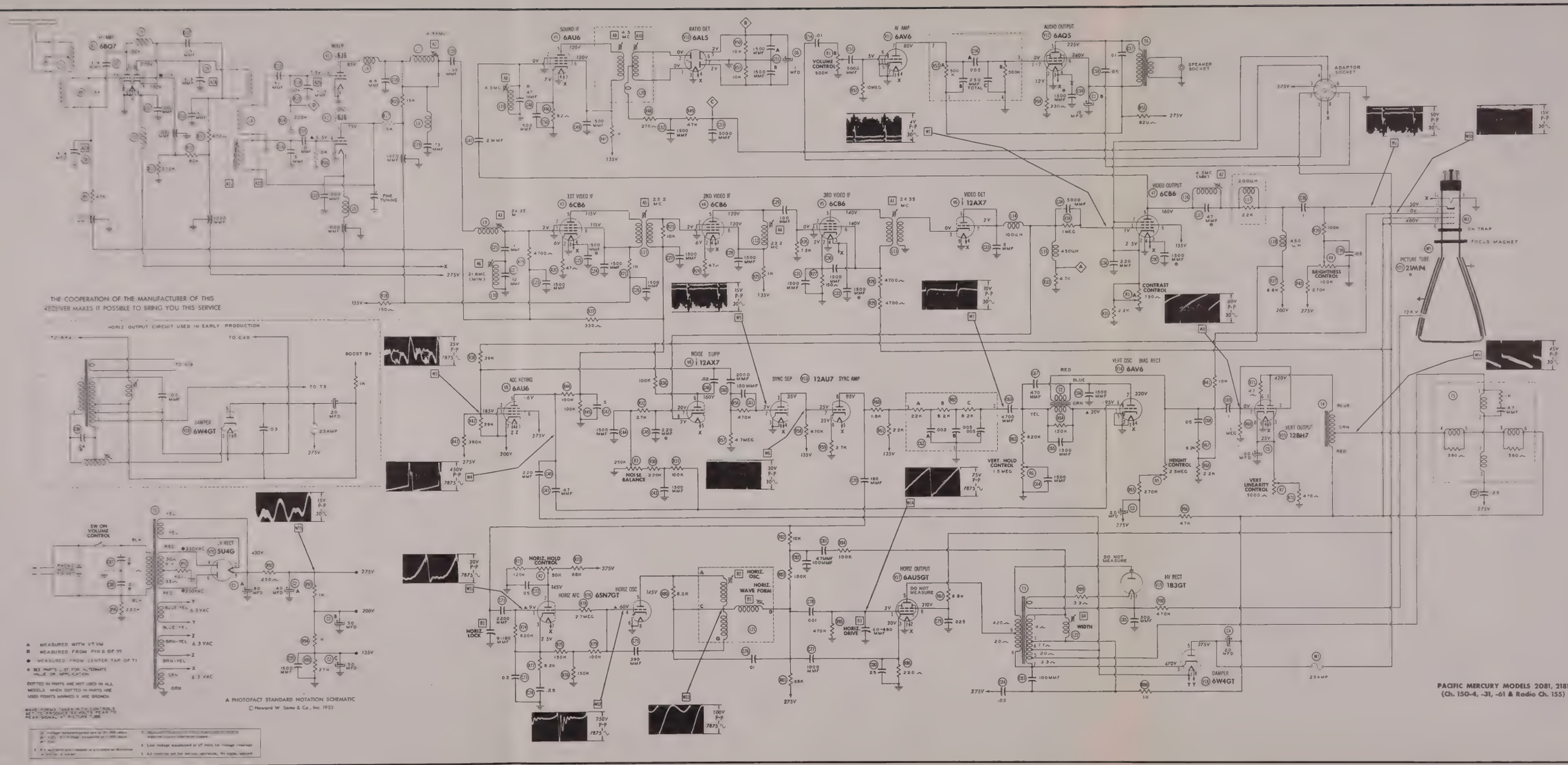
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PACIFIC MERCURY
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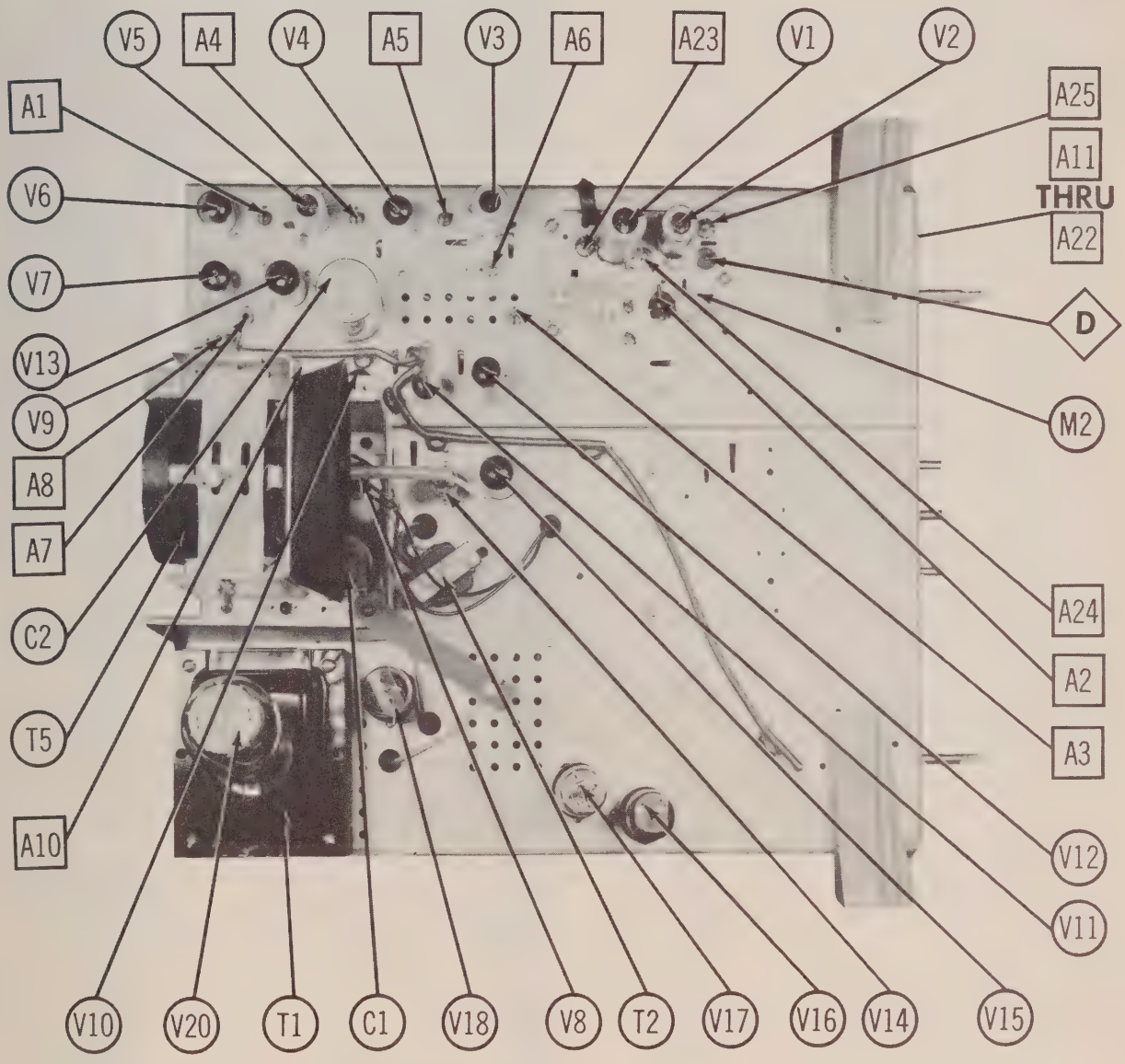
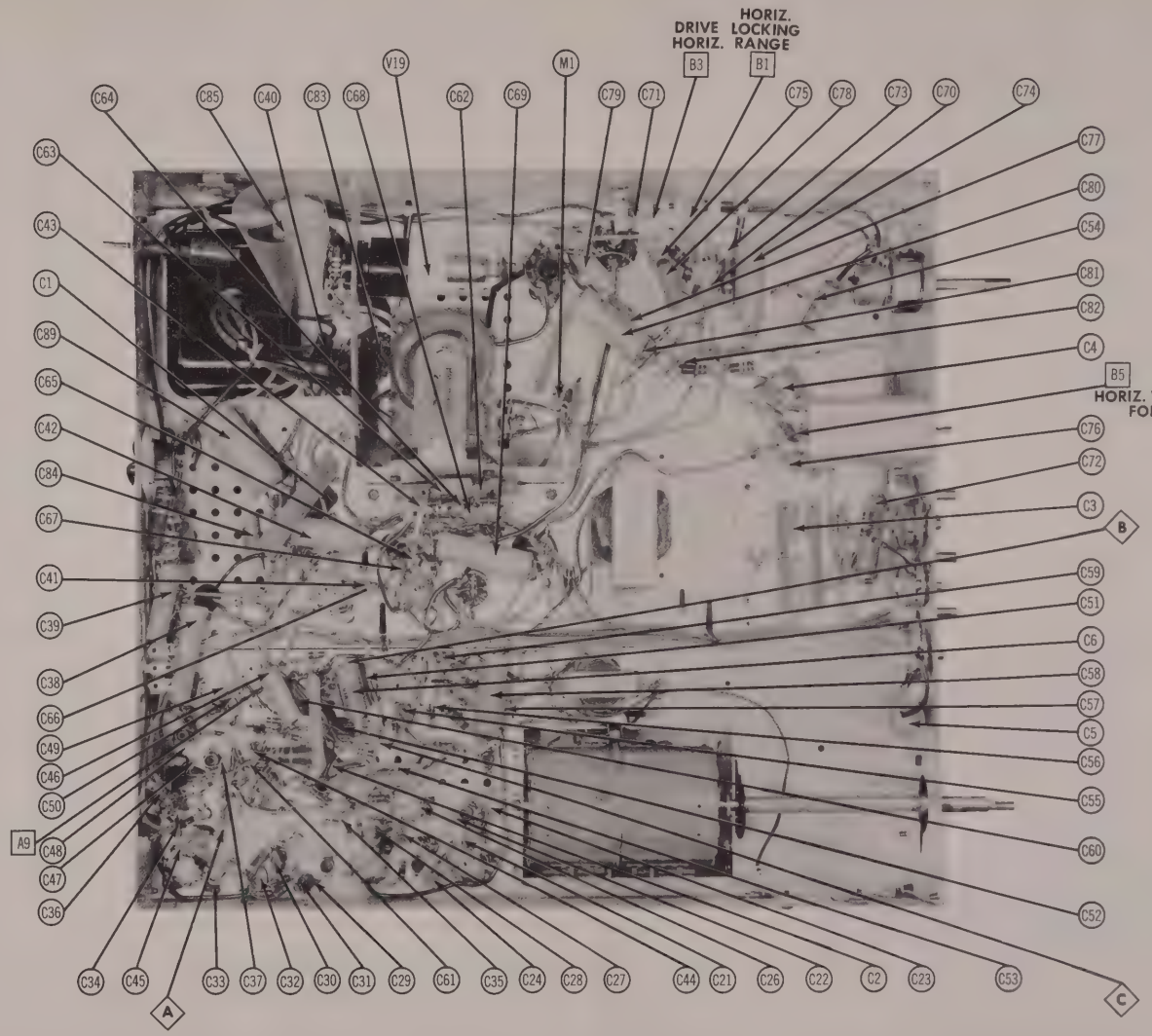
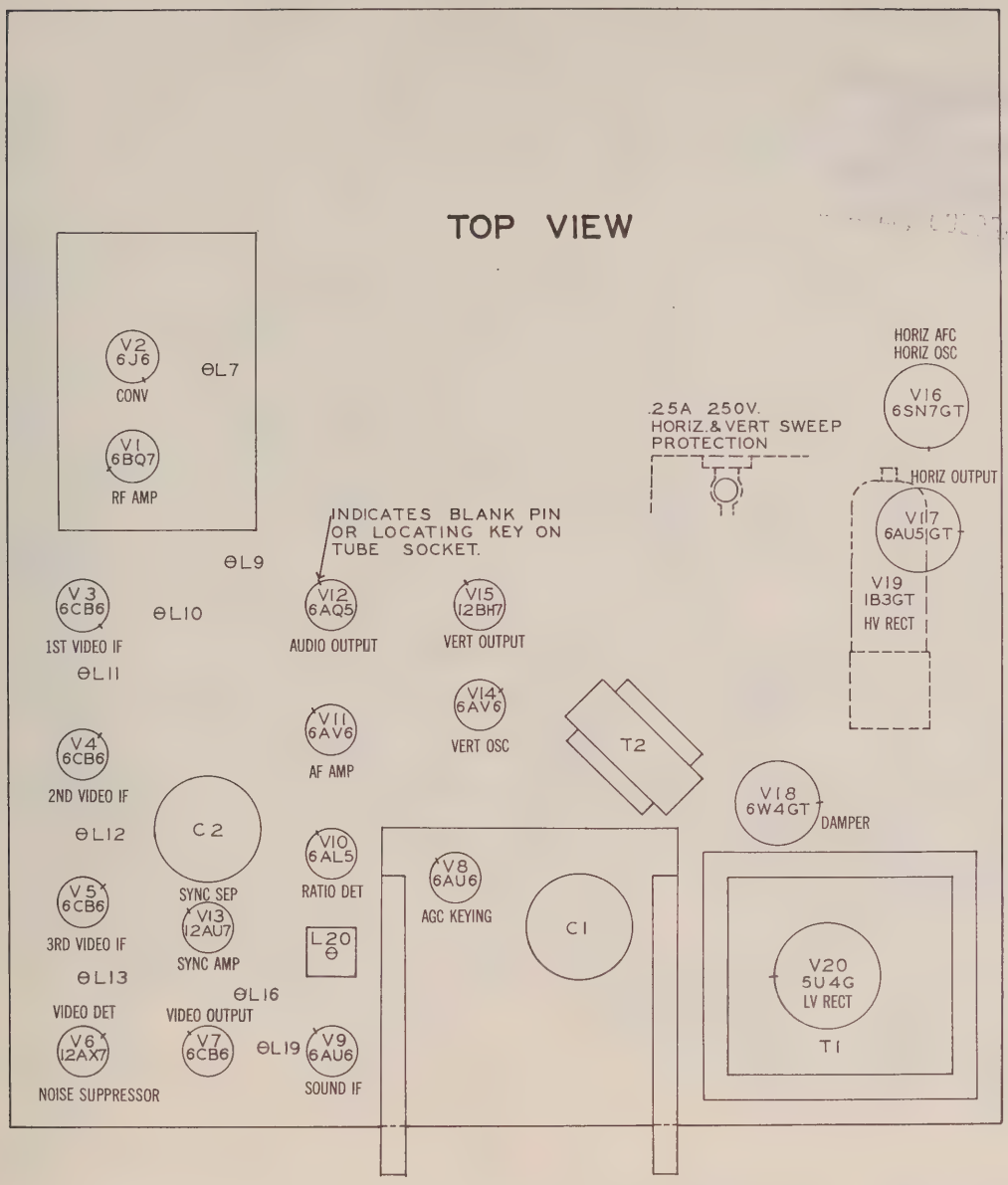


CHASSIS TOP VIEW



CHASSIS BOTTOM VIEW-CAPACITOR AND ALIGNMENT IDENTIFICATION

TUBE PLACEMENT CHART



TUBE FAILURE CHECK CHART

The following chart lists tubes whose failures are most likely to produce the indicated symptoms. Refer to tube placement chart for location and type of tube.

POWER SUPPLY FAILURE
No raster, no sound - V20

LOSS OF PICTURE OR SOUND
No pic, no sound, has raster - V2, V3, V4, V5, V6
No pic, no sound, has snow - V1, V2, V3
No pic, has sound, has raster - V8, V21
Has pic, no sound - V9, V10, V11, V12
Overloaded picture - V8

SYNC FAILURE
No vert. sync - V13, V14
No horiz. sync - V13, V16
No vert. or horiz. sync - V6, V13

SWEEP FAILURE
No raster, has sound - V16, V17, V18, V19, V21, Fuse (M1)
No vert. deflection - V14, V15
Poor vert. linearity or foldover - V13, V14, V15
Poor horiz. linearity or foldover - V16, V17, V18
Narrow picture - V16, V17, V18, V19, V20
Vert. off freq. - V13, V14
Horiz. off freq. - V13, V16

TV ALIGNMENT INSTRUCTIONS

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

The high voltage shock hazard can be eliminated by removing the horizontal oscillator tube (V16) from its socket.

VIDEO IF ALIGNMENT

Remove the converter tube (V2) from its socket and replace with a 6J6 which has pin 1 removed. This will disable the local oscillator and reduce the possibility of erroneous indications.
Connect the negative lead of a 3 volt battery to the ungrounded side of C42. Connect the positive lead to chassis.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT VTVM	ADJUST	REMARKS
1.	Direct	High side to an ungrounded tube shield floating over dummy converter tube. Low side to chassis.	24.35MC (Unmod)	Any	DC probe to point ◇A Common to chassis.	A1	Adjust for maximum deflection. Attenuate generator output to maintain 1 to 1.5 Volt reading on VTVM.
2.	"	"	"	"	"	A2	Connect a 1KΩ resistor across the grid resistor R19, of V3, Adjust A2 for maximum deflection . Remove the 1K resistor.
3.	"	"	"	"	"	A3	Adjust for maximum deflection.
4.	"	"	23.2MC	"	"	A4	"
5.	"	"	25.2MC	"	"	A5	"
6.	"	"	21.6MC	"	"	A6	Adjust for MINIMUM deflection.

OVERALL VIDEO IF RESPONSE CHECK

Connect the syncrhonized sweep voltage from the signal generator to the horizontal input of the oscilloscope for horizontal deflection.

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
7.	Direct	High side to an ungrounded tube shield floating over dummy converter tube. Low side to chassis.	24MC (10MC Swp)	21.6MC 26.1MC	Any	Vert. Amp. to point ◇A . Low side to chassis.		Check for response similar to Fig. 1 with 21.6MC in trap notch and 26.1MC at 50% response. If necessary readjust A1 thru A5 for desired response.

4.5MC TRAP ALIGNMENT

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT VTVM	ADJUST	REMARKS
8.	.01MFD	High side to point ◇A Low side to chassis.	4.5MC (Unmod)	Any	DC probe thru detector (Fig. 2) to pin 11 of picture tube. Common to chassis.	A7	Adjust for MINIMUM deflection.

SOUND IF ALIGNMENT USING AM SIGNAL GENERATOR AND VTVM

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT VTVM	ADJUST	REMARKS
9.	.01MFD	High side to point ◇A Low side to chassis.	4.5MC (Unmod)	Any	DC probe to point ◇B Common to chassis.	A8, A9	Adjust for maximum deflection.
10.	"	"	"	"	DC probe to point ◇C Common to chassis.	A10	Adjust for a zero reading. A positive and negative reading will be obtained on either side to the correct setting.

SOUND IF ALIGNMENT USING FM SIGNAL GENERATOR AND OSCILLOSCOPE

Use frequency modulated signal with 60∿ modulation and 450KC sweep. Use 120∿ sawtooth voltage in scope for horizontal deflection.

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
9.	.01MFD	High side to point ◇A Low side to chassis.	4.5MC (450KC Swp)	4.5MC	Any	Vert. Amp. to point ◇B . Low side to chassis.	A8, A9	Disconnect stabilizer capacitor C6. Adjust for maximum amplitude and symmetry as in Fig. 3.
10.	"	"	"	"	"	Vert. Amp. to point ◇C . Low side to chassis.	A10	Reconnect capacitor C6. Adjust so that 4.5MC occurs at center of crossover lines as in Fig. 4. SLIGHTLY retouch A9 for maximum amplitude and straightness of crossover lines.

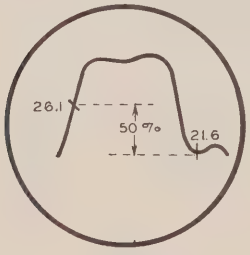


FIG.1

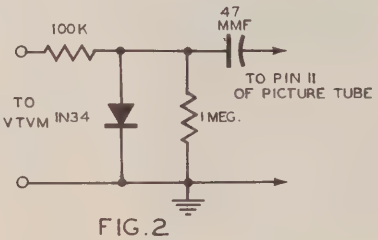


FIG.2

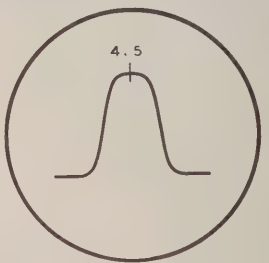


FIG. 3

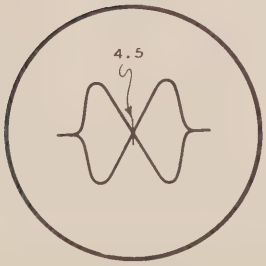


FIG. 4

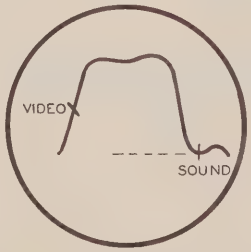


FIG.5

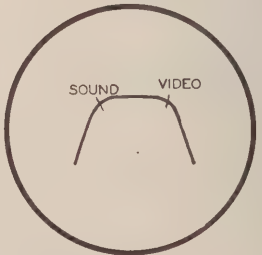


FIG.6

TV ALIGNMENT INSTRUCTIONS (CONT.)

OSCILLATOR ALIGNMENT

PENTODE TUNER

Complete oscillator alignment may not be necessary. If the oscillator seems to be off frequency approximately the same amount for a majority of the channels it may be possible to correct them in one step using A26. It should be noted that this is an all channel oscillator circuit adjustment and should not be used to correct any individual channel. If adjustment of A26 will not bring all channels well within the range of the fine tuning control it will be necessary to adjust the channel strip adjustment for each channel that is off frequency.

THE FOLLOWING APPLIES TO BOTH PENTODE AND CASCODE TUNERS

The channel oscillator adjustment screws are reached through a hole just to the right of the channel switch shaft. The correct adjustment screw is accessible through this hole as the channel switch is tuned to each channel.
Connect the synchronized sweep voltage from the signal generator to the horizontal imput of the oscilloscope for horizontal deflection.
The sweep generator output lead should be terminated with its characteristic impedance, usually 50 ohms.
Set the fime tuning control to the mid-position of its range.

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	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
11.	Two 120Ω Carbon Resistors	Across antenna terminals with 2 120Ω in each lead.	213MC (10MC Swp)	211.25MC 215.75MC	13	Vert. Amp. to point (A). Low side to chassis.	All	Adjust to place sound marker in trap notch as shown in Fig. 5. Video marker should be at 50%.
			207MC (10MC Swp)	205.25MC 209.75MC	12		A12	
			201MC (10MC Swp)	199.25MC 203.75MC	11		A13	
			195MC (10MC Swp)	193.25MC 197.75MC	10		A14	
			189MC (10MC Swp)	187.25MC 191.75MC	9		A15	
			183MC (10MC Swp)	181.25MC 185.75MC	8		A16	
			177MC (10MC Swp)	175.25MC 179.75MC	7		A17	
			85MC (10MC Swp)	83.25MC 87.75MC	6		A18	
			79MC (10MC Swp)	77.25MC 81.75MC	5		A19	
			69MC (10MC Swp)	67.25MC 71.75MC	4		A20	
			63MC (10MC Swp)	61.25MC 65.75MC	3		A21	
			57MC (10MC Swp)	55.25MC 59.75MC	2		A22	

RF AND MIXER ALIGNMENT

Reduce the battery bias to 1.5 volts.
Connect the synchronized sweep voltage from the signal generator to the horizontal input of the oscilloscope for horizontal deflection.
The sweep generator output lead should be terminated with its characteristic impedance, usually 50 ohms.

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
12.	Two 120Ω Carbon Resistors	Across antenna terminals with 120Ω in each lead.	207MC (10MC Swp)	205.25MC 209.75MC	12	Vert. Amp. thru 10KΩ to point (D) Low side to chassis.	A23, A24, A25	Adjust for curve of maximum amplitude with band width as shown in Fig. 6.
13.	"	"	213MC (10MC Swp)	211.25MC 215.75MC	13	"		Check for response curve similar to Fig. 6. If markers fall below 70% on any channel make slight compromise adjustments of A23, A24 and A25 with channel selector set to that channel. Recheck all other channels to see that they have not been seriously affected.
			201MC (10MC Swp)	199.25MC 203.75MC	11			
			195MC (10MC Swp)	193.25MC 197.75MC	10			
			189MC (10MC Swp)	187.25MC 191.75MC	9			
			183MC (10MC Swp)	181.25MC 185.75MC	8			
			177MC (10MC Swp)	175.25MC 179.75MC	7			
			85MC (10MC Swp)	83.25MC 87.75MC	6			
			79MC (10MC Swp)	77.25MC 81.75MC	5			
			69MC (10MC Swp)	67.25MC 71.75MC	4			
			63MC (10MC Swp)	61.25MC 65.75MC	3			
			57MC (10MC Swp)	55.25MC 59.75MC	2			

RADIO ALIGNMENT INSTRUCTIONS

RADIO ALIGNMENT

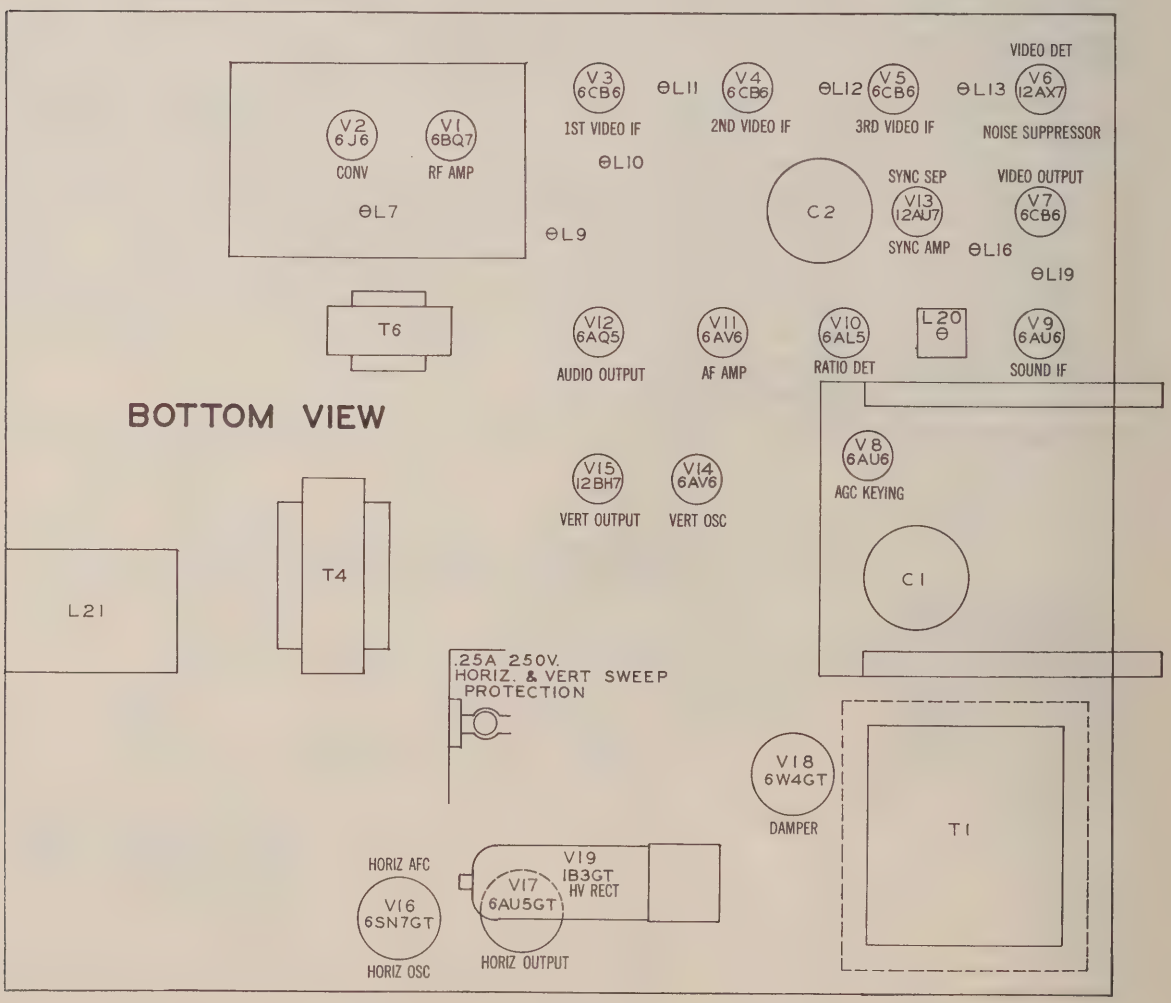
Turn Radio-Phono-TV switch to "Radio".
Set tone control fully clockwise.
Turn tuning gang fully closed and set pointer 7/8 inch from left edge of dial back plate.
Volume control should be at maximum position. Output of signal generator should be no higher than necessary to obtain an output reading. Use an insulated alignment screwdriver for adjusting.
Loop should be maintained in same relative position to chassis as when receiver is in cabinet.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
14.	.1MFD	High side to pin 7 (grid) of 6BE6 (V22). Low side to chassis.	455KC	Radio	Tuning gang fully open	Across voice coil	A27, A28 A29, A30	Adjust for maximum output.
15.		Loop	1400KC	"	1400KC	"	A31	Tune pointer to 1⅛" from right hand edge of dial back plate for 1400KC dial setting. Fashion loop of several turns of wire and radiate signal into loop of receiver. Adjust for maximum output.
16.		"	600KC	"	Tune to 600KC signal	"	A32	Adjust for maximum output while rocking gang.
17.		"	1400KC	"	1400KC	"	A31, A33	Adjust in order given for maximum output.

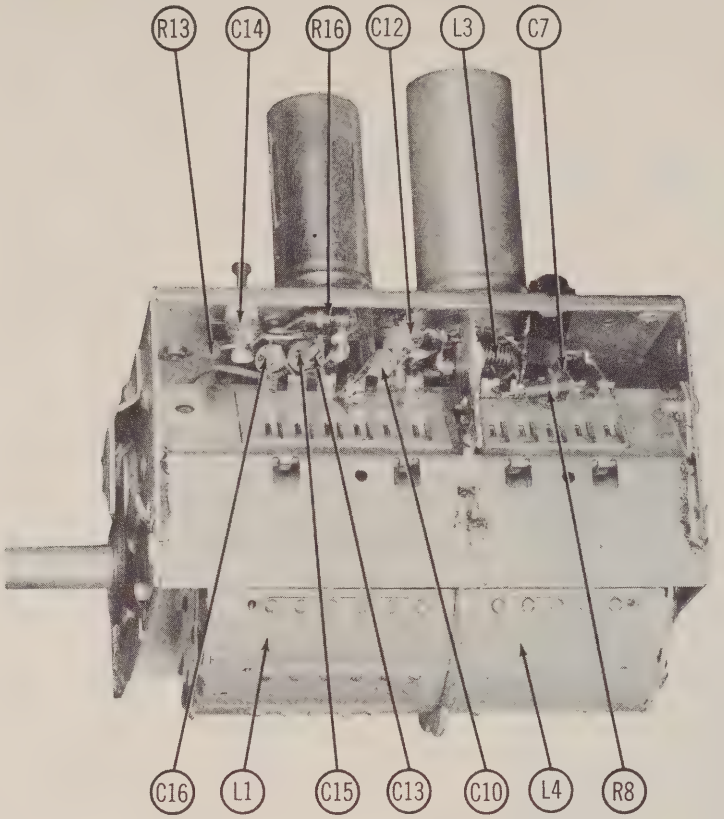
RESISTANCE MEASUREMENTS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V 1	6BQ7	INF	150KΩ	0Ω	.1Ω	0Ω	†720Ω	†100KΩ	INF	0Ω
V 2	6J 6	†17KΩ	†17KΩ	.1Ω	0Ω	230KΩ	10KΩ	0Ω		
V 3	6CB6	100KΩ	47Ω	0Ω	.1Ω	†3.4KΩ	†3.4KΩ	0Ω		
V 4	6CB6	100KΩ	47Ω	.1Ω	0Ω	†3.2KΩ	†3.2KΩ	0Ω		
V 5	6CB6	7.5KΩ	150Ω	.1Ω	0Ω	†9.6KΩ	†9.6KΩ	0Ω		
V 6	12AX7	4.7KΩ	4.7KΩ	.4Ω	.1Ω	.1Ω	†110KΩ	150KΩ	4.7KΩ	0Ω
V 7	6CB6	1 Meg	300Ω	.1Ω	0Ω	†8KΩ	†2.2KΩ	300Ω		
V 8	6AU6	†24KΩ	†1.2KΩ	¶0Ω	¶.1Ω	200KΩ	†250Ω	†1.2KΩ		
V 9	6AU6	1.9Ω	0Ω	.1Ω	0Ω	†3.2KΩ	†3.2KΩ	82Ω		
V 10	6AL5	INF	INF	0Ω	.1Ω	10KΩ	0Ω	10KΩ		
V 11	6AV6	10 Meg	0Ω	0Ω	.1Ω	0Ω	0Ω	†500KΩ		
V 12	6AQ5	500KΩ	330Ω	0Ω	.1Ω	†1.5KΩ	†1.1KΩ	500KΩ		
V 13	12AU7	†470KΩ	5.1Meg	0Ω	.1Ω	.1Ω	†6.2KΩ	†470KΩ	2.7KΩ	0Ω
V 14	6AV6	1.5Meg	0Ω	0Ω	.1Ω	0Ω	470KΩ	#800KΩ		
V 15	12BH7	#2.5KΩ	1 Meg	1.8KΩ	.1Ω	.1Ω	#2.5KΩ	1 Meg	1.8KΩ	0Ω
V 16	6SN7GT	850KΩ	†60KΩ	300KΩ	250KΩ	†68KΩ	0Ω	.1Ω	0Ω	
V 17	6AU5GT	470KΩ	.1Ω	220Ω	INF	#20Ω	INF	0Ω	†7KΩ	
V 18	6W4GT	#33Ω	INF	100KΩ	INF	†250Ω	.200KΩ	#23Ω	#23Ω	
V 19	1B3GT	PINS 1 - 8 HAVE INF RESISTANCE								Top Cap #450Ω
V 20	5U4G	INF	25KΩ	INF	■30Ω	INF	■33Ω	INF	25KΩ	
V 21	21MP4	0Ω	12KΩ	Pin 6 #1KΩ	Pin 10 #1KΩ	Pin 11 150KΩ	Pin 12 .1Ω			

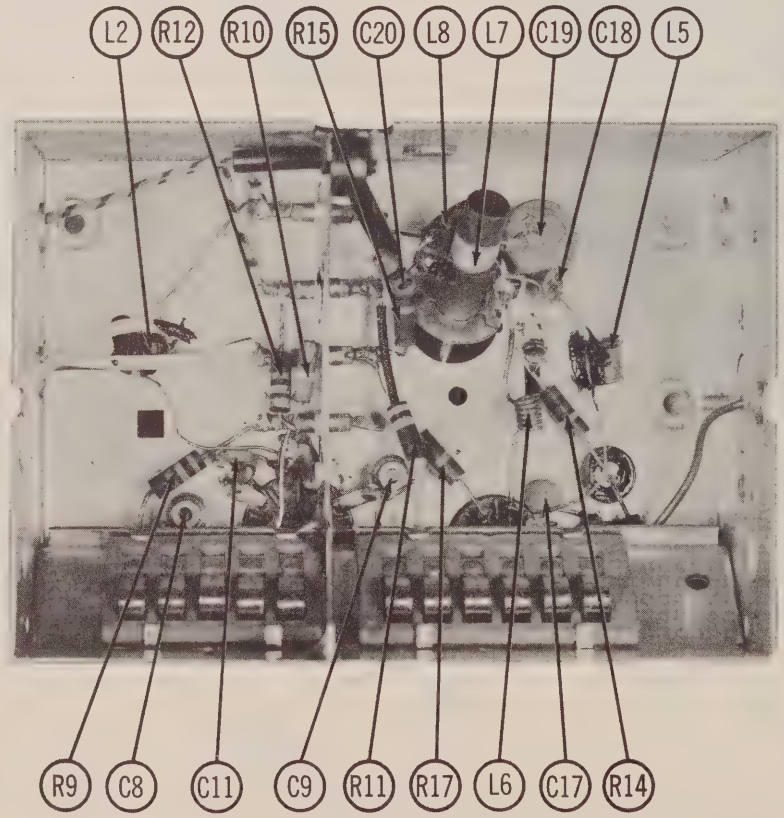
ALL MEASUREMENTS TAKEN IN TV POSITION ONLY
† MEASURED FROM PIN 8 OF V20
# MEASURED FROM PIN 3 OF V18
¶ MEASURED FROM PIN 3 OF V8
■ MEASURED FROM CENTERTAP OF T1



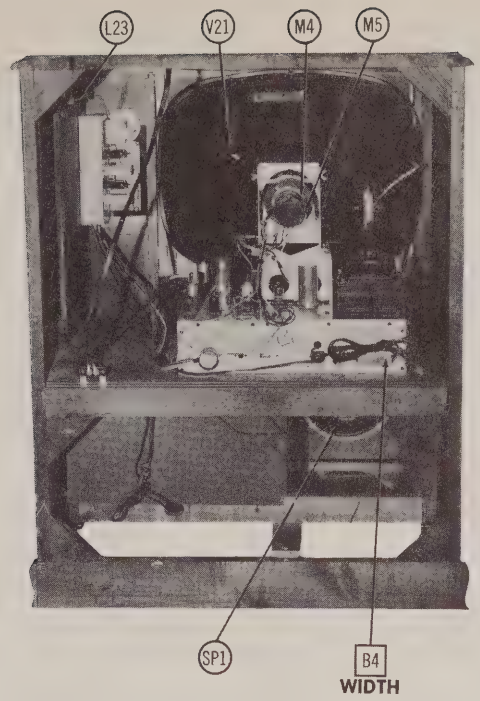
TUBE PLACEMENT CHART



RF TUNER-RIGHT SIDE



RF TUNER-BOTTOM VIEW



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DENVER, COLORADO

CABINET-REAR VIEW

HORIZONTAL SWEEP CIRCUIT ADJUSTMENTS

Turn the set on and tune in a TV station, preferably a test pattern.

Set the horizontal lock control fully counter clockwise, and the horizontal lock trimmer (B1) fully clockwise.

Turn the horizontal oscillator slug (B2) counter clockwise until the picture loses sync, then clockwise until the picture falls into synchronization.

Turn the horizontal lock control to the middle of its range and adjust the horizontal drive trimmer (B3) counter clockwise as far as possible without crowding of the picture. Adjustment of B3 may make it necessary to readjust B2, as before, to maintain sync.

With the horizontal lock at maximum clockwise position, momentarily interrupt the signal by switching to another channel and back again.

Turn the horizontal lock control slowly counter clockwise and note the least number of diagonal bars present just before the picture falls into sync. If this number is not between 2 and 4 adjust B1 for that condition.

Adjust the width slug (B4) for a picture slightly wider than necessary to fill the picture mask.

HORIZONTAL WAVEFORM ADJUSTMENT

Connect the vertical amplifier of an oscilloscope to terminal C of L21. If necessary adjust the horizontal waveform slug (B5) for a waveform on the scope as in Fig. 7 with broad and narrow peaks of equal height.

NOISE BALANCE CONTROL ADJUSTMENT

Tune set to strongest available TV signal.

Turn noise balance control fully clockwise, then slowly counter clockwise until picture begins to distort. Turn the control clockwise just enough to eliminate the distortion.

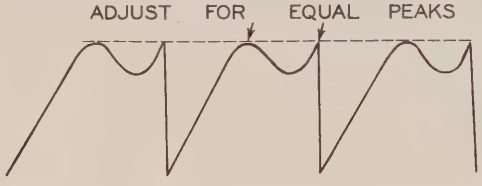
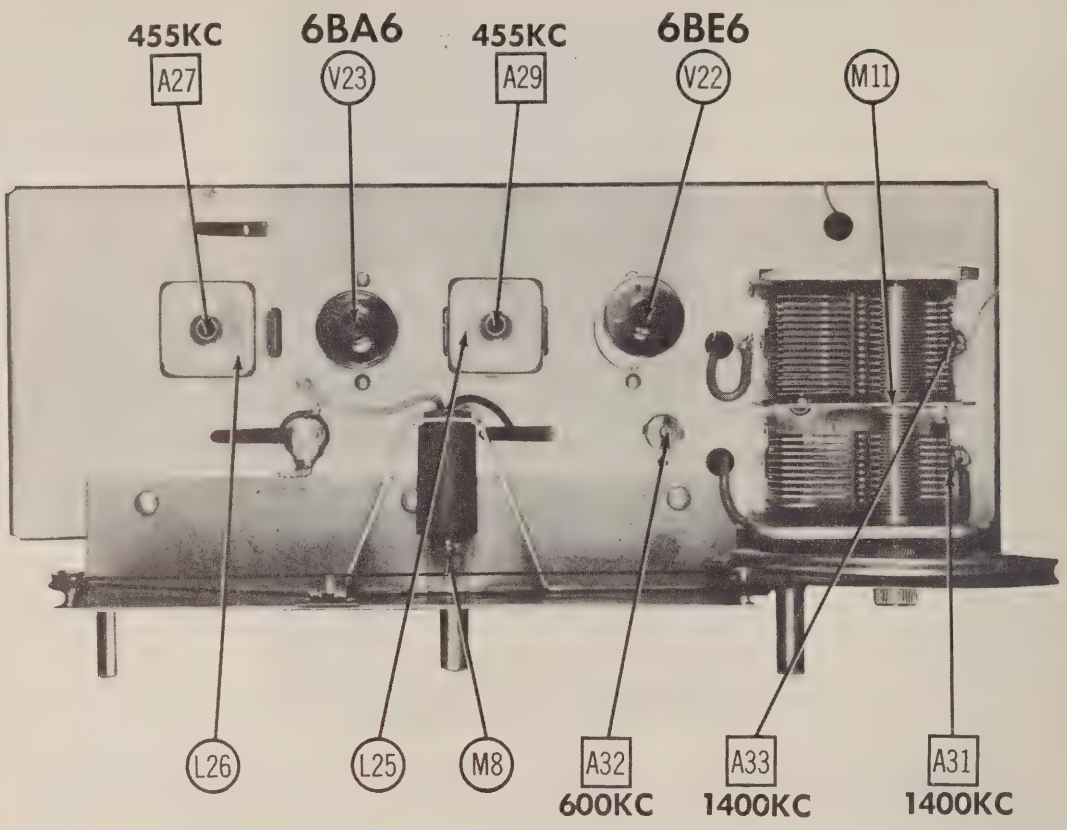


FIG. 7

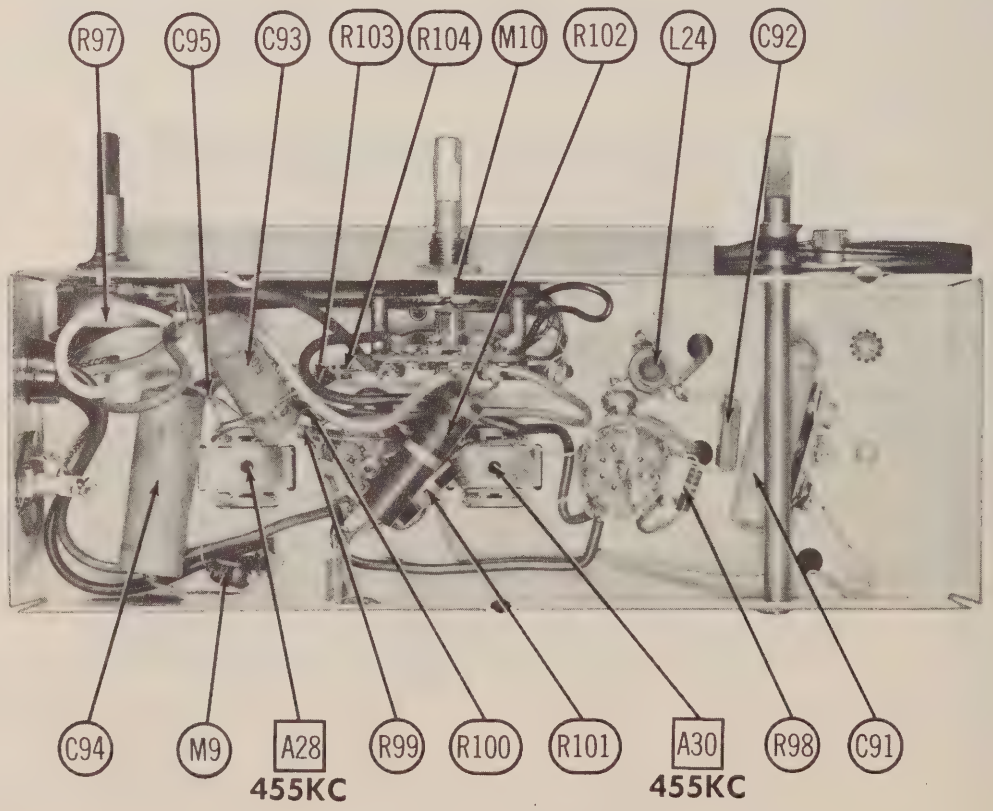
DISASSEMBLY INSTRUCTIONS

1. Remove 4 push on type control knobs from front panel.
2. Remove 10 wood screws. Remove rear cover.
3. Disconnect built-in antenna. Remove 2 wood screws. Remove antenna bracket.
4. Disconnect AC plug (phono motor), radio power plug, phono audio cable plug.
5. Remove 4 chassis bolts. Remove chassis.

1. Remove 3 push on type control knobs from front panel.
2. Remove 8 chassis mounting board screws. Remove mounting board.
3. Remove 3 metal screws. Remove radio from mounting board.



RADIO CHASSIS-TOP VIEW



RADIO CHASSIS-BOTTOM VIEW

TV PARTS LIST AND DESCRIPTIONS

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA: MERCURY PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RTMA BASE TYPE	NOTES
V1A	RF Amplifier	6BQ7 (or) 6BK7	6BQ7 6BK7	9AJ 9AJ	Cascode Tuner
B	RF Amplifier	6CB6	6CB6	7CM	
V2	Converter	6J6	6J6	7BF	
V3	1st. Video IF Amp.	6CB6	6CB6	7CM	
V4	2nd. Video IF Amp.	6CB6	6CB6	7CM	
V5	3rd. Video IF Amp.	6CB6	6CB6	7CM	
V6	Video Detector-Noise Suppressor	12AX7	12AX7	9A	
V7	Video Output	6CB6	6CB6	7CM	
V8	AGC Keying	6AU6	6AU6	7BK	
V9	Sound IF Amp.	6AU6	6AU6	7BK	
V10	Ratio Detector	6AL5	6AL5	6BT	
V11	AF Amplifier	6AV6	6AV6	7BT	
V12	Audio Output	6AQ5	6AQ5	7BZ	
V13	Sync Separator-Sync Amplifier	12AU7	12AU7	9A	
V14	Vert. Oscillator - Bias Rectifier	6AV6	6AV6	7BT	
V15	Vert. Output	12BH7	12BH7	9A	
V16	Horiz. AFC-Horiz. Oscillator	6SN7GT	6SN7GT	8BD	
V17	Horiz. Output	6AU5GT	6AU5GT	6CK	
V18	Damper	6W4GT	6W4GT	4CG	
V19	HV Rectifier	1B3GT	1B3GT	3C	
V20	LV Rectifier	5U4G	5U4G	5T	

CATHODE-RAY TUBE

ITEM No.	REPLACEMENT DATA: MERCURY PART No.	REPLACEMENT DATA: SYLVANIA PART No.	RTMA BASE TYPE	NOTES
V21A	21MP4	21MP4	12C	① Chassis 150-4
B	20CP4 ①		12D	② Chassis 150-31
C	21AP4 ②		12D	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING CAP.	RATING VOLT	REPLACEMENT DATA: MERCURY PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	MALLORY PART No.	SPRAGUE PART No.	NOTES
C1A	▲80	450	PMA-42000	AFH2-62		BO47		FP245	TVL-2776	
B	▲10	400								
C2A	▲40	450	PMA-42001	AFH3-44		CO35		FP240		
B	■50	350						TC78		
C	▲50	300								
C3	20	300	PMA-42006	PRS450/20		BR2045A		TC65	TVA-1608	
C4	20	300	PMA-42006	PRS450/20		BR2045A		TC65	TVA-1608	
C5	100	50	PMA-42005	PRS50/100		BRH501		TC3501	TVA-1310	
C6	1	50	PMA-42002	PRS150/4		BBR1-50T		TC31	TVA-1300	
C7	3.9									
C8	3-9				829-10					
C9	.5-3				829-3			CT565A		
C10	51									
C11	1000			BPD-001	DD-102	TM5D1	801-001	DC-521	5HK-D1	
C12	1.5				TCZ-1.5		NP0K-1R5	ZT-5515	5TCCB-V15	
C13	51									
C14	.5-3				829-3			CT565A		
C15	10			SI10NP0	TCZ-10		NP0K-100	ZT-541	5TCC-Q1	
C16	5			SI5N750	TCN-5		N750K-050	NT-551	5TCUB-V5	
C17	1000			BPD-001	DD-102	TM5D1	801-001	DC-521	5HK-D1	
C18	6.8			SI6.8NP0	TCZ-6.8		NP0K-6R8	ZT-5568	5TCCB-V68	
C19	73									
C20	130			SI130	D6-131		GP2K-131	UC-5313	5GA-T13	
C21	1		PMA-40519-1		TCZ-1		NP0K-010		5TCCB-V1	
C22	12			SI12	D6-120		GP1K-120	UC-5412	5GA-Q12	
C23	1500		PMA-40517-2	BPD-0015	DD-152	TM5D15	801-0015	DC-5215	5HK-D15	
C24	1500		PMA-40517-2	BPD-0015	DD-152	TM5D15	801-0015	DC-5215	5HK-D15	
C25	1500		PMA-40517-2	BPD-0015	DD-152	TM5D15	801-0015	DC-5215	5HK-D15	Note 1
C26	1500		PMA-40517-2	BPD-0015	DD-152	TM5D15	801-0015	DC-5215	5HK-D15	
C27	1500		PMA-40517-2	BPD-0015	DD-152	TM5D15	801-0015	DC-5215	5HK-D15	
C28	1500		PMA-40517-2	BPD-0015	DD-152	TM5D15	801-0015	DC-5215	5HK-D15	
C29	100		PMB-40518-14	SI100	D6-101	TM5T1	GP1K-101	UC-531	5GA-T1	
C30	1500		PMA-40517-2	BPD-0015	DD-152	TM5D15	801-0015	DC-5215	5HK-D15	
C31	1500		PMA-40517-2	BPD-0015	DD-152	TM5D15	801-0015	DC-5215	5HK-D15	
C32	1500		PMA-40517-2	BPD-0015	DD-152	TM5D15	801-0015	DC-5215	5HK-D15	Note 1
C33	5		PMB-40518-1	SI5	TCZ-4.7	5W5V5	GP1K-050	UC-555	5GA-V5	
C34	5000		PMA-40517-3	BPD-005	DD-502	TM5D5	811-005	DC-525	5HK-D5	
C35	1500		PMA-40517-2	BPD-0015	DD-152	TM5D15	801-0015	DC-5215	5HK-D15	
C36	220		PMB-40518-19	SI220	D6-221		GP2K-221	UC-5322	5GA-T22	
C37	47			SI47NP0	TCZ-47		NP0K-470	ZT-5447	5TCC-Q47	Note 2
C38	.1	600	PMB-41006-51	P688-1	DF-104	PTE6P 1		PT601	6TM-P1	
C39	.05	400	PMB-41006-30	P488-05	DF-503	PTE4S5		PT415	4TM-S5	
C40	220	150	PMA-40005-1							
C41	47	500	PMB-40003-15	1468-00005	D6-470	5W5Q5	GP1K-470	MC225	1FM-45	
C42	.5	100	PMA-41008	P288-5		PJ2P5		PT405	2TM-P5	
C43	1500		PMA-40517-2	BPD-0015	DD-152	TM5D15	801-0015	DC-5215	5HK-D15	
C44	1500		PMA-40517-2	BPD-0015	DD-152	TM5D15	801-0015	DC-5215	5HK-D15	
C45	220		PMB-40518-19	SI220	D6-221		GP2K-221	UC-5322	5GA-T22	Note 3
C46	.02	400	PMB-41006-28	P488-02	DF-203	PTE4S2		PT412	4TM-S2	
C47	2		PMB-40519-3		TCZ-2.2		NP0K-2R2		5TCCB-V22	
C48	47			SI47NP0	TCZ-47		NP0K-470	ZT-5447	5TCC-Q47	Note 2
C49	1500		PMB-40518-24	BPD-0015	DD-152	TM5D15	801-0015	DC-5215	5HK-D15	
C50	1500		PMA-40517-2	SI1500	D6-152	TM5D15	GP2L-152	UC-5215	5HK-D15	
C51A	1500		PMA-40517-4	BPD-2X0015	DD-2-152	TM5DD15	812-0015	DCD-5215	5HK-2D15	
B	1500									
C52	1500		PMA-40517-2	BPD-0015	DD-152	TM5D15	801-0015	DC-5215	5HK-D15	
C53	5000		PMB-40518-32	SI5000	D6-502	TM5D5	GP2-333-502	UC-525	5HK-D5	

TV PARTS LIST AND DESCRIPTIONS (Continued)

CAPACITORS (CONT.)

ITEM No.	RATING CAP.	RATING VOLT	MERCURY Part No.	AEROVOX Part No.	CENTRALAB Part No.	CORNELL DUBILIER Part No.	ERIE Part No.	MALLORY Part No.	SPRAGUE Part No.	NOTES
C54	.01	400	PMB-41006-7	P488-01	D6-103	PTE4SI	GP2-333-103	PT4II	4TM-SI	
C55	5000		PMA-40517-3	BPD-005	DD-502	TM5D5	8II-0005	DC-5215	5HK-D5	
C58A	.005									
B	250		†PMA-95001		†PC-70		†1406-01		†1104-C4	
C										
C57	.01	600	PMB-41006-45	P588-01	D6-103	PTE6SI	GP2-333-103	PT6II	6TM-SI	
C58	.05	600	PMB-41006-49	P688-05	DF-503	PTE6S5		PT6I5	6TM-S5	
C59	1500		PMA-40517-2	BPD-0015	DD-152	TM5D15	80I-0015	DC-5215	5HK-D15	Note 1
C60	2000		PMB-40518-27	SII200	D6-202	TM5D2	GP2-333-202	UC-5212	5HK-D2	
C61	150		PMB-40518-17	SII50	D6-151	TM5T15	GP2K-151	UC-5315	5GA-T15	
C62A	.002			P688-002		PTE6D2		PT622		
B	.005		+ PMA-95000	P688-005	*PC-100	PTE6D5	*1405-01	PT625	*I01C1	
C	.005			P688-005		PTE6D5		PT625		
C63	4700	500	PMB-40003-83	1464-005		LDR5D5		MCB465	MS-25	
C64	1500		PMA-40517-2	BPD-0015	DD-152	TM5D15	80I-0015	DC-5215	5HK-D15	
C65	1500		PMB-40518-24	SII500	D6-152	TM5D15	GP2L-152	UC-5215	5HK-D15	
C66	1500		PMA-40517-2	SII500	D6-152	TM5D15	GP2L-152	UC-5215	5HK-D15	
C67	470		PMA-40518-23	SII470	D6-471		GP2K-471	UC-5347	5GA-T47	
C68	.05	600	PMB-41006-49	P688-05	DF-503	PTE6S5		PT6I5	6TM-S5	
C69	.1	600	PMB-41006-51	P688-1	DF-104	PTE6P1		PT601	6TM-P1	
C70	180	500	PMB-40003-29							
C71	2200	500	PMB-40003-55							
C72	.05	400	PMB-41006-30	P488-05	DF-503	PTE4S5		PT4I5	4TM-S5	
C73	.02	600	PMB-41006-28	P688-02	DF-203	PTE6S2		PT602	6TM-S2	
C74	.25	200	PMB-41006-15	P488-25		PTE4P25		PT4025	2TM-P25	
C75	390	500	PMB-40003-37	1469-0004		5R5T4		MCB243	MS-34	
C76	.01	200	PMA-40003-1	489-01				OTII0	PX-I6	
C77	1000	500	PMB-40003-47	1464-001		1R5D1		MCB255	MS-21	
C78	.001	600	PMB-41006-39	P688-001	D6-102	PTE6D1	GP2L-102	PT621	6TM-D1	
C79	.025	600	PMB-41006-47	P688-025				TP45I		
C80	.25	200	PMB-41006-15	P488-25		PTE4P25		PT4025	2TM-P25	
C81	47	500	PMB-40003-15	1469-00005		5R5Q5		MCB225	MS-45	
C82	100		PMB-40518-14	SII00	D6-101	TM5T1	GP1K-101	UC-531	5GA-T1	
C83	100	1500	PMA-40005-2							
C84	.03	400	PMB-41006-75	P488-03		PTE4S3		PT4I3	4TM-S3	
C85	500	20000	PMB-40003-37	HV20C	TV3-502	MMC-C3075	413-501	HV20035	20DK-T5	
C86	.04	600	PMB-41006-78	P688-04		PTE6S4		PT6I4	6TM-S4	Note 1
C87	.01	600	PMA-41007-45	6892GXY-01		PJ681		PT6II	6TM-SI	Note 1
C88	.01	600	PMA-41007-45	6892GXY-01		PJ681		PT6II	6TM-SI	Note 1
C89	.25	600	PMB-41006-53	684-25		PTE6P25		PT6025	6TM-P25	
C90	1500		PMA-40517-2	BPD-0015	DD-152	TM5D15	80I-0015	DC-5215	5HK-D15	Note 1

Note 1. Not used in all Models.
Note 2. Some Models use 56MMF in this application.
Note 3. Not used in Chassis with serial numbers lower than 47610
♦ Items C62A, C62B, C62C, R62A, R62B, R62C are combined in one unit.
† Items C58A, C58B, C58C, R53A, R53B are combined in one unit.
When replacing items separately, C58B and C58C should total 250MMF.

CONTROLS

ITEM No.	RATING RESISTANCE	RATING WATTS	MERCURY Part No.	IRC Part No.	CLAROSTAT Part No.	CENTRALAB Part No.	MALLORY Part No.	INSTALLATION NOTES
R1A	750Ω	2	PMB-48015	QJ-415*	RTV-382		WF75I	Contrast-Wire Wound-Panel
B	500KΩ	½					UR55A †	Volume-Rear
C	Switch						US-28	Attach to R1B
R2A	50KΩ	½	PMB-48014-1	QU-123	AG-44-8	AB-31	U-35	Horiz. Hold
B	Shaft		Not Req.	Not Req.	K88-3	AK-1	Not Req.	Attach to R2A
R3A	350KΩ	½	PMB-48014-2	QU-130	AG-55-8	AB-50	SU-48	Noise Balance
B	Shaft		Not Req.	Not Req.	FK8-1/4	AK-1	Not Req.	Attach to R3A
R4A	100KΩ	½	PMB-48014-2	QU-128	AG-49-8	AB-40	U-41	Brightness
B	Shaft		Not Req.	Not Req.	K88-3	AK-1	Not Req.	Attach to R4A
R5A	3.5Meg	½	PMB-48014-5	QU-138	AG-84-8	AB-83	SU-585	Height
B	Shaft		Not Req.	Not Req.	FK8-1/4	AK-1	Not Req.	Attach to R5A
R6A	1.5Meg	½	PMB-48014-7	QU-138	AG-83-8	AB-75	U-153	Vert . Hold
B	Shaft		Not Req.	Not Req.	K88-3	AK-1	Not Req.	Attach to R6A
R7A	5000Ω	½	PMA-48016	QU-114	AG-18-8	AB-10	SU-14	Vert. Linearity
B	Shaft		Not Req.	Not Req.	FK8-1/4	AK-1	Not Req.	Attach to R7A

* CONCENTRIKIT EQUIVALENT - KIT K-3, BASE ELEMENTS & SHAFTS W14-105 & P3-114 (Panel) R13-133 & R1-205 (Rear) & SWITCH 76-1.
† UNIVERSAL REPLACEMENT (MALLORY EXACT DUPLICATE PART NO. UE2IW8).

RESISTORS

ITEM No.	RATING OHMS	RATING WATT	MERCURY Part No.	IRC Part No.	NOTES
R8	15KΩ	½			
R9	47KΩ	½			
R10	220KΩ	½		BTS-220K	
R11	470Ω	½		BTS-470	
R12	180KΩ	½		BTS-180K	
R13	10KΩ	½			
R14	220KΩ	½			
R15	15KΩ	½			
R16	10KΩ	½			
R17	15KΩ	½			
R18	150Ω	½	PMA-45018-15	BTS-150	
R19	4700Ω	½	PMA-45018-47	BTS-4700	
R20	47Ω	½	PMA-45018-9		
R21	1000Ω	½	PMA-45018-29	BTS-1000	
R22	330Ω	½	PMA-45018-19	BTS-330	
R23	10KΩ	½	PMA-45018-37		
R24	47Ω	½	PMA-45018-9		
R25	1000Ω	½	PMA-45018-25	BTS-1000	
R26	7500Ω-5%	½	PMA-45014-72		
R27	150Ω	½	PMA-45018-15	BTS-150	
R28	4700Ω	2	PMA-45019-33	BTB-4700	
R29	4700Ω	2	PMA-45019-33	BTB-4700	
R30	220KΩ	½	PMA-45018-53	BTS-220K	
R31	100KΩ	½	PMA-45018-41	BTS-100K	
R32	27KΩ	½	PMA-45018-42	BTS-27K	
R33	4700Ω	½	PMA-45018-33	BTS-4700	
R34	1 Meg	½	PMA-45018-61	BTS-1 Meg	
R35	2200Ω	½	PMA-45018-28	BTS-2200	
R36	100KΩ	½	PMA-45018-49	BTS-100K	
R37	6800Ω	2	PMA-45019-35	BTB-6800	
R38	39KΩ	½	PMA-45018-44	BTS-39K	
R39	100KΩ	½	PMA-45018-49	BTS-100K	
R40	470KΩ	½	PMA-45018-54	BTS-270K	
R41	10KΩ	½	PMA-45018-37	BTS-10K	
R42	39KΩ	½	PMA-45018-44	BTS-39K	
R43	390KΩ	½	PMA-45018-58	BTS-390K	
R44	100KΩ	½	PMA-45018-48	BTS-100K	
R45	100KΩ	½	PMA-45018-49	BTS-100K	
R46	82Ω	½	PMA-45018-12	BTS-82	
R47	1000Ω	½	PMA-45018-29	BTS-1000	
R48	270Ω	½	PMA-45018-18	BTS-270	
R49	47KΩ	½	PMA-45018-45	BTS-47K	
R50	10KΩ	½	PMA-45018-37	BTS-10K	
R51	10KΩ	½	PMA-45018-37	BTS-10K	
R52	10 Meg	½	PMA-45018-72	BTS-10 Meg	
R53A	500KΩ				
B	500KΩ		† PMA-95001		
R54	330Ω	½	PMA-45018-18	BTA-330	
R55	820Ω	2	PMA-45019-24	BTB-820	
R56	470KΩ	½	PMA-45018-57	BTS-470K	

RESISTORS (CONT.)

ITEM No.	RATING OHMS	RATING WATT	MERCURY Part No.	IRC Part No.	NOTES
R57	4.7Meg	½	PMA-45018-85	BTS-4.7Meg	
R58	470Kı	½	PMA-45018-57	BTS-470K	
R59	2700Ω	½	PMA-45018-30	BTS-2700	
R60	1800Ω	½	PMA-45018-28	BTS-1800	
R61	2200Ω	½	PMA-45018-29	BTS-2200	
R62A	22KΩ	½		BTS-22K	
B	8200Ω	½	♦PMA-95000	BTS-8200	
C	8200Ω	½		BTS-8200	
R63	820KΩ	½	PMA-45018-60	BTS-820K	
R64	470KΩ	½	PMA-45018-51	BTS-150K	
R65	270KΩ	½	PMA-45018-54	BTS-270K	
R66	47KΩ	½	PMA-45018-45	BTS-47K	
R67	8200Ω	½	PMA-45018-36	BTS-8200	
R68	2200Ω	½	PMA-45018-28	BTS-2200	
R69	1 Meg	½	PMA-45018-61	BTS-1 Meg	
R70	470Ω	½	PMA-45018-21	BTS-470	
R71	47Ω	½	PMA-45018-9		
R72	120KΩ	1	PMA-45017-50	BTA-120K	
R73	68KΩ	1	PMA-45017-47	BTA-68K	
R74	820KΩ	½	PMA-45018-60	BTS-820K	
R75	150KΩ	1	PMA-45017-51	BTA-150K	

† Items R53A, R53B, C56A, C56B, C56C are combined in one unit.
♦ Items R62A, R62B, R63C, C62A, C62B, C63C are combined in one unit.

TRANSFORMER (POWER)

ITEM No.	RATING PRI.	RATING SEC. 1	RATING SEC. 2	RATING SEC. 3	MERCURY Part No.	STANCOR Part No.	MERIT Part No.	CHICAGO Part No.	TRIAD Part No.
T1	117VAC @1.83A	700VCT .220ADC	5VAC @3A SEC. 4	6.3VAC @3A SEC. 5	PMB5003				
			6.3VAC @ 1.2A	6.3VAC @ 6.9A					

TRANSFORMER (SWEEP CIRCUITS)

ITEM No.	RATING DC RESISTANCE PRI.	RATING SEC.	MERCURY Part No.	STANCOR Part No.	MERIT Part No.	CHICAGO Part No.	TRIAD Part No.	NOTES
T2	180Ω	190Ω	PMA-58006-2	A-8111	A-3000	TBO-1 ①	A-87X ②	Vert. Osc. Trans.
T3	440Ω tap @ 20Ω	350 tap @ 40Ω, 1.7Ω, 31.2Ω SEC. 2 0Ω	PMC-58002		HVO-9		D-19 ③	Horiz. Output Trans.
T4	1500Ω tap @ 5Ω		PMA-58004	A-8141	A-3019	TSO-12	A-104X	Vert. Output Trans.
T5A	24Ω		PMA-58000	DY-9A	MDF-70	TY-3	Y-17	Horiz. Deflection Coils
B	45Ω							Vert. Deflection Coils

① Mount on top of chassis.
② Drill one new mounting hole.
③ Wire as in original circuit (no connection to D-19 terminal "T")

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	RATING IMPEDANCE	RATING DC RES. PRI.	RATING DC RES. SEC.	MERCURY Part No.	STANCOR Part No.	MERIT Part No.	CHICAGO Part No.	TRIAD Part No.	NOTES
T6	7.5KΩ	3-4Ω	425Ω	.8Ω	PMB-51005	A-3878	A-2931	RO-13	S-9X

COILS (RF-IF)

ITEM No.	USE	DC RES. PRI.	DC RES. SEC.	MERCURY Part No.	MERIT Part No.	NOTES
L1	Ant. Coils	0Ω CT	0Ω			
L2	Fil. Choke	0Ω				
L3	Neutralizing Coil	0Ω				
L4	RF, Mixer Grid & Osc. Coils	0Ω				
L5	Fil. Choke	0Ω				
L6	RF Choke	0Ω				
L7	Conv. Plate	.6Ω				
L8	RF Choke	.4Ω				
L9	1st. Video IF	.3Ω		PMA-52021	TV-112	
L10	21.6MC Trap	.2Ω		PMA-52020	TV-150	
L11	2nd. Video IF	.4Ω	.4Ω	PMA-52029		
L12	3rd. Video IF	.3Ω		PMA-52021	TV-113	
L13	4th. Video IF	.4Ω	.4Ω	PMA-52029		
L14	Series Peaking Coil	3.4Ω		PMA-52023	TV-181	100 Microhenries
L15	Shunt Peaking Coil	1Ω		PMA-52024	TV-183	450 Microhenries
L16	4.5MC Trap	1.9Ω		PMA-52028-2	TV-151	
L17	Series Peaking Coil	6.8Ω		PMA-52025	TV-184 *	200 Microhenries, wound on 22KΩ resistor
L18	Shunt Peaking Coil	1Ω		PMA-52024	TV-188	450 Microhenries
L19	Sound IF	1.9Ω		PMA-52028-2	TV-151	
L20	Ratio Det.	5.5Ω	.9Ω	PMA-53027	TV-115	Tertiary Winding-55Ω
L21	Horiz. Osc.	85Ω		PMB-52019	TV-162	Pri. tapped @ 33Ω, Horiz. waveform winding -47Ω
L22	Width Coil	6Ω		PMA-56003		

* Parallel with 22KΩ resistor.

SPEAKER

ITEM No.	RATINGS SIZE	RATINGS FIELD	RATINGS V. C. IMP.	MERCURY Part No.	JENSEN Part No	GUAM Part No.	NOTES
SP1	8"	PM	3-4Ω		8T-II5 Mod. P8-V	8A21	

FUSES

ITEM No	TYPE	RATING	MERCURY Part No. FUSE	MERCURY Part No. HOLDER	LITTELFUSE Part No. FUSE	LITTELFUSE Part No. HOLDER	BUSS Part No. FUSE	BUSS Part No. HOLDER
M1	3AG	1/4A 250V			312.250 (3AG-1/4A)	375001	AGC-1/4	4405

MISCELLANEOUS

ITEM No.	PART NAME	MERCURY PART No.	NOTES
M2A	RF Tuner	PMB 57002	Model 2181
B	RF Tuner		Model 2081
M3	Focus Magnet		Model 2081 and Model 2181 when using chassis #150-31.
M4	Centering Magnet		Models 2081 and 2181.
M5	Ion Trap		Models 2081 and 2181.
	Trimmer	PMA-43001	Horizontal locking range, horizontal drive 8-180 MMF, 80-480MMF.)

PHONO CARTRIDGE

ITEM No	MERCURY PART No.	ASTATIC Part No. CARTRIDGE	ASTATIC Part No. NEEDLE	SHURE Part No. CARTRIDGE	SHURE Part No. NEEDLE	ELECTRO-VOICE Part No. CARTRIDGE	ELECTRO-VOICE Part No. NEEDLE	REMARKS
M6		AC-AG-J	A-AG	W28B	A60U	33	D-2 or S-2	

ASTATIC SHURE AND ELECTRO VOICE NEEDLE LISTINGS SHOWN ABOVE ARE SPECIFIED FOR THE RESPECTIVE REPLACEMENT CARTRIDGES LISTED. FOR ORIGINAL CARTRIDGE NEEDLE REPLACEMENT SEE BELOW.

PHONO NEEDLE

(FOR REPLACEMENT IN ORIGINAL EQUIPMENT CARTRIDGE)

ITEM No	MERCURY Part No.	WALCO Part No.	JENSEN Part No.	REMARKS
M7		W-30AGA or W-30AGS	JP-312	

RADIO PARTS LIST AND DESCRIPTIONS

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	MERCURY Part No.	STANDARD REPLACEMENT	RMA BASE TYPE	INSTALLATION NOTES
V22	Converter	6BE6	8BE6	7CH	
V23	IF Amplifier	6BA6	6BA6	7BK	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING CAP.	RATING VOLT	MERCURY Part No.	AEROVOX Part No.	CENTRALAB Part No.	CORNELL-DUBILIER Part No.	ERIE Part No.	MALLORY Part No.	SPRAGUE Part No.	NOTES
C91	.05	400	PMB-41006-30	P488-05	DF-503	PTE4S5		PT4I5	4TM-S5	
C92	82	500	PMB-40006-21							
C93	.01	600	PMB-41006-45	P688-01	D6-103	PTE6SI	GP2-333-103	PT6II	6TM-SI	
C94	.05	600	PMB-41006-49	P688-05	DF-503	PTE6S5		PT6I5	6TM-S5	
C95	100		PMB-40518-14	SII00	D6-101	TM5T1	GP1K-101	UC-531	5GA-T1	

CONTROLS

ITEM No.	RATING RESISTANCE	RATING WATTS	MERCURY Part No	IRC Part No	CLAROSTAT Part No.	CENTRALAB Part No.	MALLORY Part No	INSTALLATION NOTES
R97A	50KΩ	½	PMB-48018-1	Q13-123	AG-46-Z	B-32	U-33	Tone
B	Shaft		Not Req.	Not Req.	FS-3	Not Req.	Not Req.	Attach to R97A

RESISTORS

ITEM No.	RATING OHMS	RATING WATT	MERCURY Part No.	IRC Part No.	NOTES
R98	22KΩ	½	PMB-45015-41	BTS-22K	
R99	2.2Meg	½	PMB-45015-65	BTS-2.2Meg	
R100	150Ω	½	PMB-45015-15	BTS-150	
R101	10KΩ	2	PMB 45019-37	BTB-iUK	

ITEM No	RATING OHMS	RATING WATT	MERCURY Part No	IRC Part No	NOTES
R102	8200Ω	2	PMB-45019-33	BTB-8200	
R103	47KΩ	½	PMB 45015-45	BTS-47K	
R104	470KΩ	½	PMB 45015-57	BTS-470K	

RADIO PARTS LIST AND DESCRIPTIONS (Continued)

COILS (RF-IF)

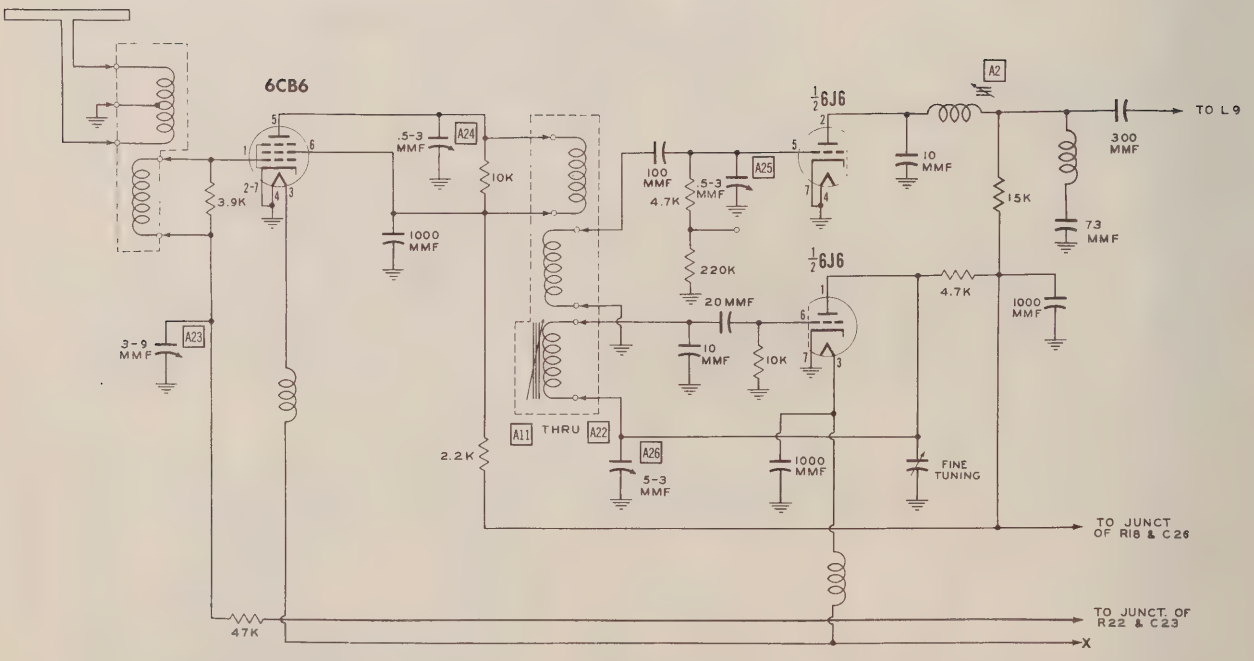
ITEM No.	USE	DC RES.		REPLACEMENT DATA		NOTES
		PRI.	SEC.	MERCURY PART No.	MERIT PART No.	
L23	Loop Ant.	.6Ω		PMB-52034		
L24	Osc. Coil	4.2Ω		PMA-52032		Tapped @ 4Ω
L25	Input IF	14.5Ω	14.5Ω	PMD-52033-1	BC-352	
L26	Output IF	14.5Ω	14.5Ω	PMD-52033-2	BC-353	

DIAL LIGHTS

ITEM No.	BASE TYPE	VOLTS	AMPS.	BEAD COLOR	REPLACEMENT DATA		NOTES
					MERCURY PART No.		
M8	Bayonet	6-8	.15	Brown			Type No. 47

MISCELLANEOUS

ITEM No.	PART NAME	MERCURY PART No.	NOTES
M9	Crystal		1N65
M10	Switch	PMB-60006	Radio-TV-Phono
M11	Tuning Capacitor	PMB-44001	38-468MMF, 34-193MMF



A PHOTOFACT STANDARD NOTATION SCHEMATIC

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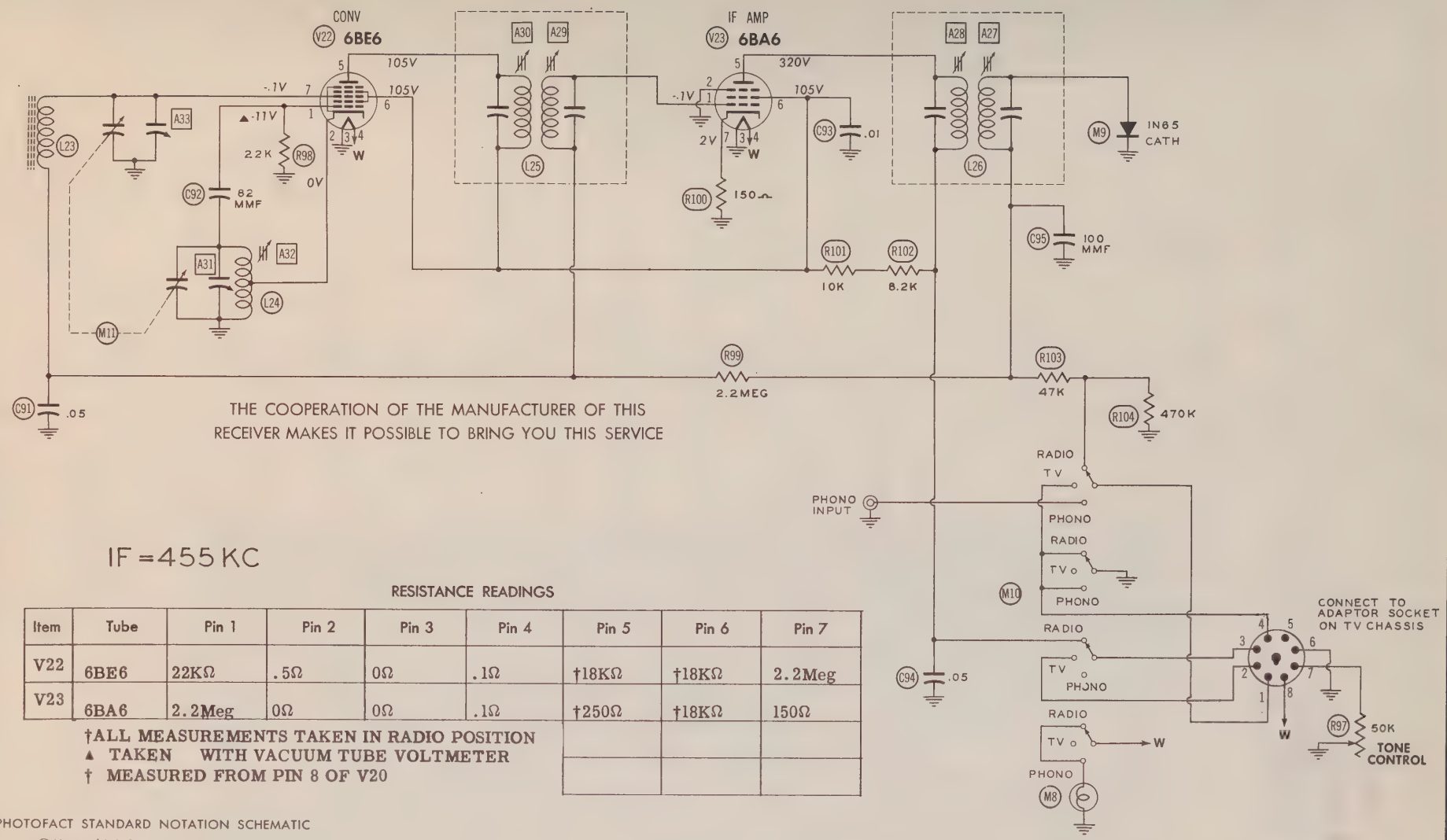
ALTERNATE TUNER SCHEMATIC



THE COOPERATION OF THE MANUFACTURER OF THIS RECEIVER MAKES IT POSSIBLE TO BRING YOU THIS SERVICE

IF = 455 KC

RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7
V22	6BE6	22KΩ	.5Ω	0Ω	.1Ω	†18KΩ	†18KΩ	2.2Meg
V23	6BA6	2.2Meg	0Ω	0Ω	.1Ω	†250Ω	†18KΩ	150Ω

†ALL MEASUREMENTS TAKEN IN RADIO POSITION
▲ TAKEN WITH VACUUM TUBE VOLTMETER
† MEASURED FROM PIN 8 OF V20

A PHOTOFACT STANDARD NOTATION SCHEMATIC

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RADIO SCHEMATIC

MODELS 2081, 2181 (Ch. 150-4, -31, -61 & Radio Ch. 155)

PACIFIC MERCURY

SERVICING IN THE FIELD

TUNER OSCILLATOR ADJUSTMENTS

Touch-up adjustments of the RF Tuner Oscillator Circuit may be accomplished by removal of the Channel Selector and fine tuning knobs. The adjustments are accessible, one at a time, through the small hole in the cabinet to the right of the channel selector shaft.

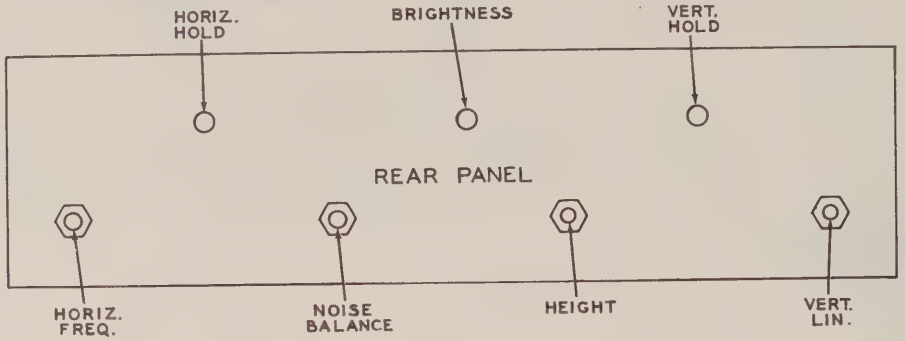
PICTURE TUBE SAFETY GLASS CLEANING

Remove 4 wood screws and 2 wood strips (1 on each side of safety glass). Remove safety glass. Use extreme caution when removing safety glass.

PICTURE TUBE REMOVAL

For picture tube removal it is necessary to remove chassis. (See disassembly instructions).

SERVICE ADJUSTMENT LOCATION



SPECIAL ADJUSTMENTS - NOISE BALANCE CONTROL

Adjustment of noise balance control can be made from the front panel. For correct adjustment see Horiz. Sweep Circuit Adj. on page 11.

HORIZONTAL OSCILLATOR FIELD ADJUSTMENT

Adjustment of the Horiz. Oscillator slug (L21) can be made from the front panel. For correct adjustment see Horiz. Sweep Circuit Adj. on page 11.

SOUND IF DETECTOR BUZZ ADJUSTMENT

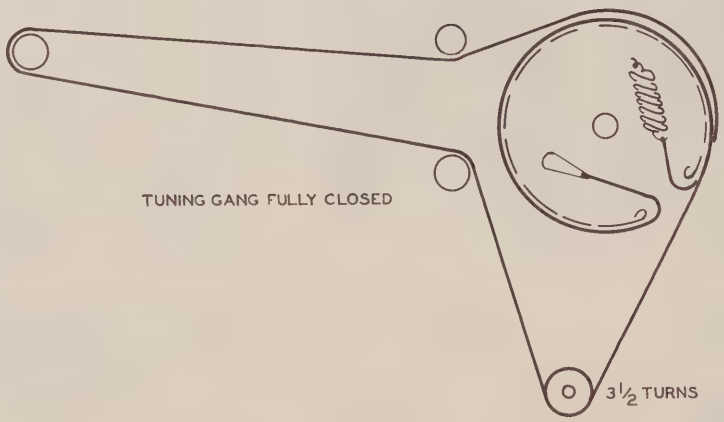
To eliminate Sound IF Detector buzz, adjust the Ratio Detector Secondary (L20) located on top of chassis. (See tube placement chart).

FUSES

One fuse is used for Horiz. Sweep Circuit protection. For location see tube placement chart.

CENTERING

Centering is accomplished mechanically by adjusting two magnetic rings around the neck of the picture tube located flush against the yoke. Rotate the two rings around the neck of the picture tube until proper centering of picture is obtained.



RADIO DRIVE CORD STRINGING

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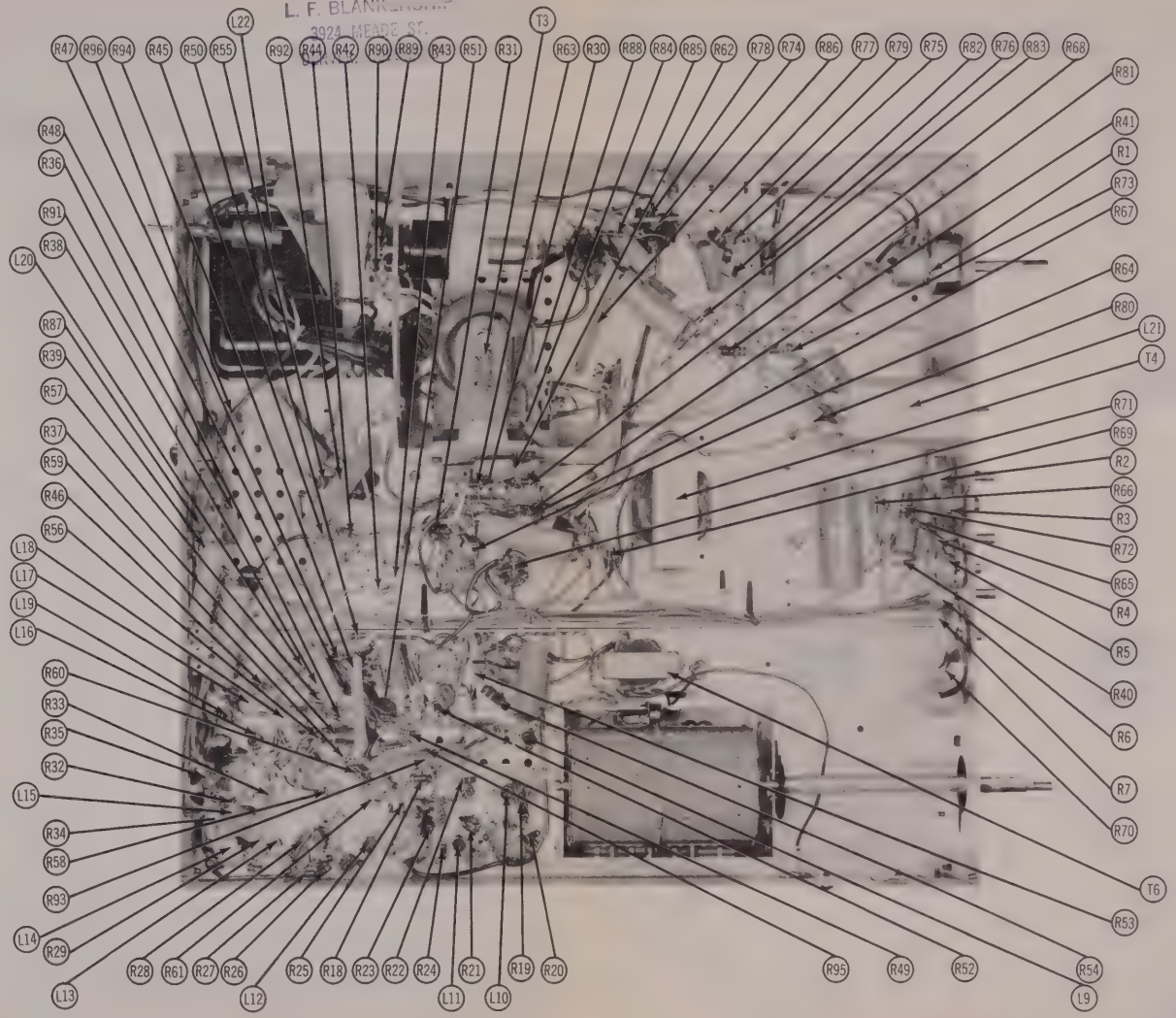

CHASSIS BOTTOM VIEW-RESISTOR AND INDUCTOR IDENTIFICATION

SILVERTONE
MODEL 2007 (Ch. 757.100)

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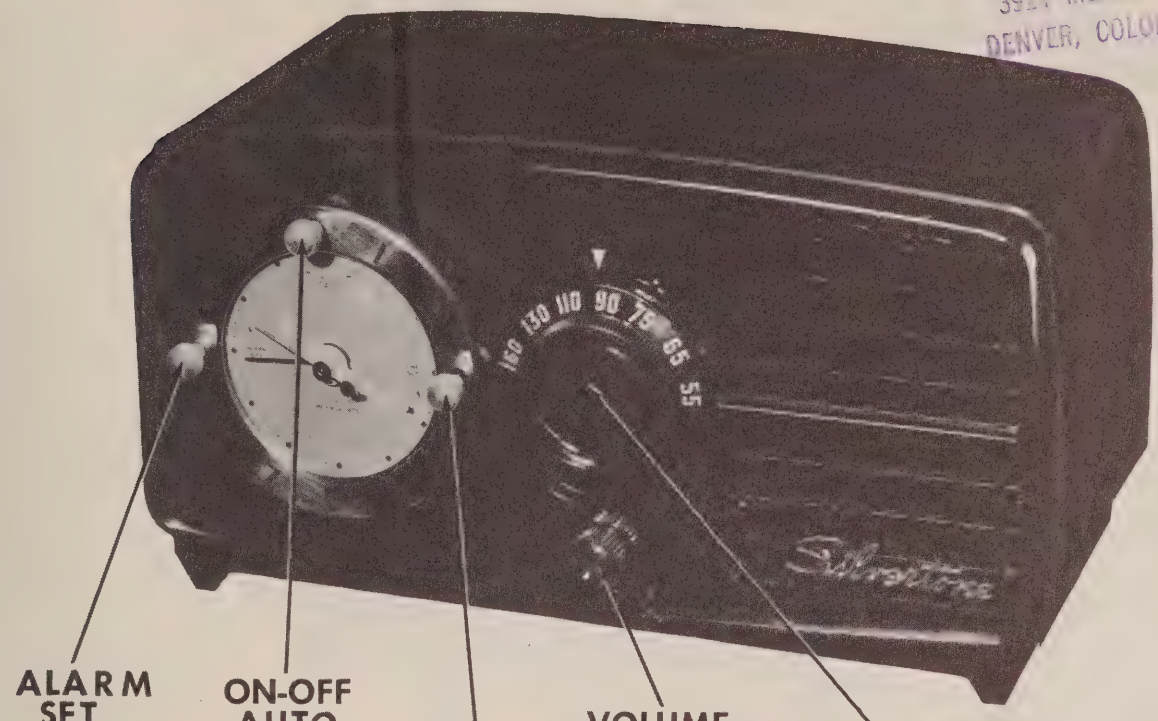
SILVERTONE
MODEL 2007 (Ch. 757.100)



SILVERTONE
MODEL 2007 (Ch. 757.100)

TRADE NAME	Silvertone 2007 (Ch. 757.100)
SUPPLIER	Sears Roebuck & Co., 925 S. Homan, Chicago, Ill.
TYPE SET	AC Operated AM Superheterodyne Receiver With Electric Clock
TUBES (Four)	Types 12BE6 Conv., 12AV6 Det-AVC-AF Amp., 50L6GT Audio Output, 35W4 Rectifier
POWER SUPPLY	105-120 Volts AC-60 Cycle
RATING	.26 Amp. @ 117 Volts AC
TUNING RANGE—BROADCAST	535-1640 KC

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

Use isolation transformer, if available. If not, connect a .1MFD capacitor in series with low side of signal generator and B-. Volume control should be at maximum position. Output of signal generator should be no higher than necessary to obtain an output reading. Use an insulated alignment screwdriver for adjusting.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
1.	.1 MFD	High side to pin 7 (grid) of 12BE6 (V1). Low side to B-.	455KC (400~Mod)	Tuning gang fully open.	Across voice coil.	A1, A2	Adjust for maximum output. If isolation transformer is not used, reduce dummy antenna to .001MFD to reduce hum modulation.
2.	"	"	1640KC	"	"	A3	"
3.	50MMF	High side to antenna connection (disconnect hank). Low side to B-.	1400KC	Tune to 1400KC signal.	"	A4	"

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PARTS LIST AND DESCRIPTIONS

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA		RTMA BASE TYPE	INSTALLATION NOTES
		SILVERTONE PART No.	STANDARD REPLACEMENT		
V1	Converter	12BE6	12BE6	7CH	
V2	Det-AVC-AF Amp.	12AV6	12AV6	7BT	
V3	Audio Output	50L6GT	50L6GT	7S	
V4	Rectifier	35W4	35W4	5BQ	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING		REPLACEMENT DATA							NOTES
	CAP.	VOLT	Silvertone PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	MALLORY PART No.	SPRAGUE PART No.	
C1A	60	150	E324	PRS150/50-30-20		EDL5315C		3N532	TVA-3430	Red
B	30	150								Blue
C	20	150								Yellow
C2	12			SI12	D6-120		GP1K-120	UC-5412	5GA-Q12	
C3	.05	400		P488-05	DF-503	PTE4S5		PT415	4TM-S5	
C4	300			SI300	D6-301	5W5T3	GP2K-301	UC-533	5GA-T3	Note 1
C5	.002	600		P688-002	D6-202	PTE6D2	GP2-333-202	PT622	6TM-D2	
C6	270			SI270	D6-271		GP2K-271	UC-5327	5GA-T27	
C7	.01	600		P688-01	D6-103	PTE6S1	GP2-333-103	PT611	6TM-S1	
C8	.01	600		P688-01	D6-103	PTE6S1	GP2-333-103	PT611	6TM-S1	
C9	.047	400		489ZX-05		PJ4S47		PT4147	4TM-S47	
C10	.05	400		P488-05		PTE4S5		PT415	4TM-S5	

Note 1. Some Models use 100MMF in this application.

CONTROLS

ITEM No.	RATING		REPLACEMENT DATA					INSTALLATION NOTES
	RESISTANCE	WATTS	Silvertone PART No.	IRC PART No.	CLAROSTAT PART No.	CENTRALAB PART No.	MALLORY PART No.	
R1A	2Meg	½	E251	Q13-139	AG-66-Z	AB-76	U-55	Volume
B	Shaft		Not Req.	Not Req.	KSS-3	AK-4	Not Req.	Attach to R1A

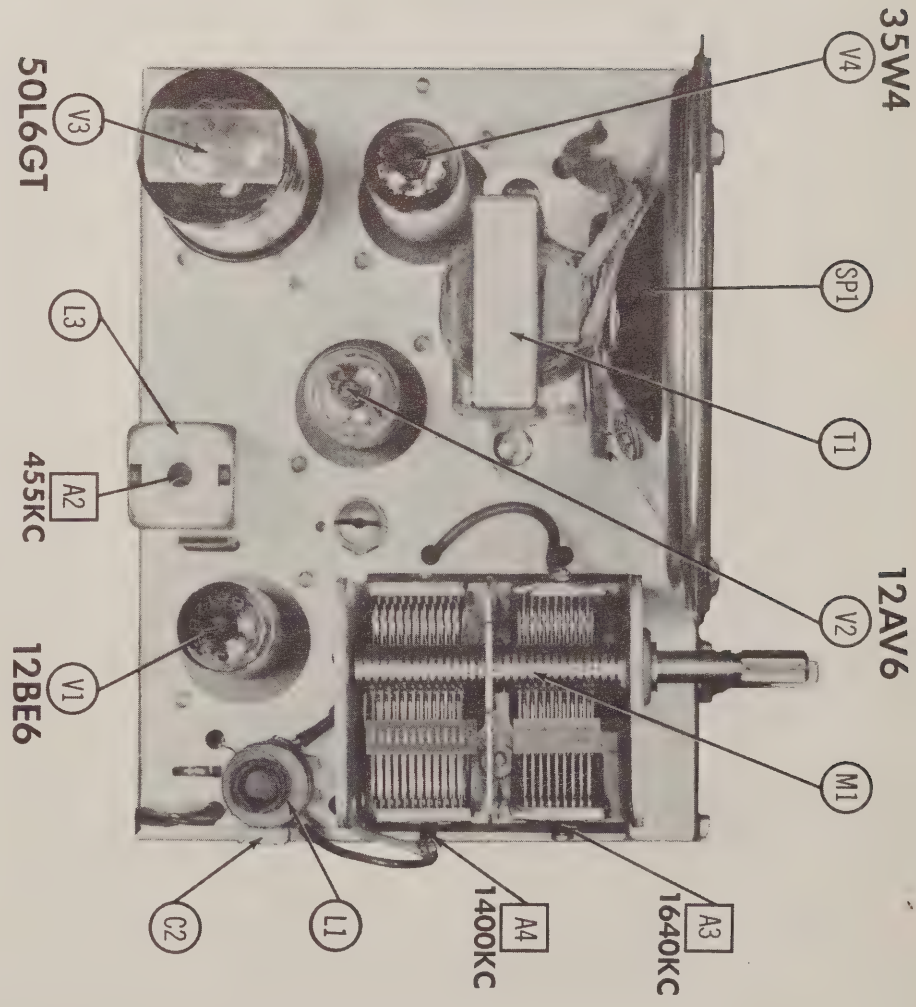
RESISTORS

ITEM No.	RATING		REPLACEMENT DATA		NOTES
	OHMS	WATT	Silvertone PART No.	IRC PART No.	
R2	680Ω	½			Note 1
R3	22KΩ	½		BTS-22K	
R4	3.3Meg	½		BTS-3.3Meg	
R5	15Meg	½		BTS-15Meg	Note 1
R6	470KΩ	½		BTS-470K	

ITEM No.	RATING		REPLACEMENT DATA		NOTES
	OHMS	WATT	Silvertone PART No.	IRC PART No.	
R7	470KΩ	½		BTS-470K	
R8	120Ω	½		BTS-120	
R9	2200Ω	1		BTA-2200	
R10	22Ω	½			
R11	47Ω	2			

Note 1. Some Models use a 820Ω resistor in this application.
Note 2. Some Models use a 10Meg resistor in this application.

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	RATING				REPLACEMENT DATA					NOTES
	IMPEDANCE		DC RES.		Silvertone PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	TRIAD PART No.	
	PRI.	SEC.	PRI.	SEC.						
T1	2.36KΩ	3.2Ω	200Ω	.59Ω	Part of Spkr.	A-3332	A-3025	RO-2 ①	S-2X①	① Drill one new mounting hole.

SPEAKER

ITEM No.	RATINGS			REPLACEMENT DATA			NOTES
	SIZE	FIELD	V. C. IMP.	Silvertone PART No.	JENSEN PART No.	QUAM PART No.	
SP1	4"	PM	3.2Ω	E103	ST-113 Mod. P4-X	4A07	

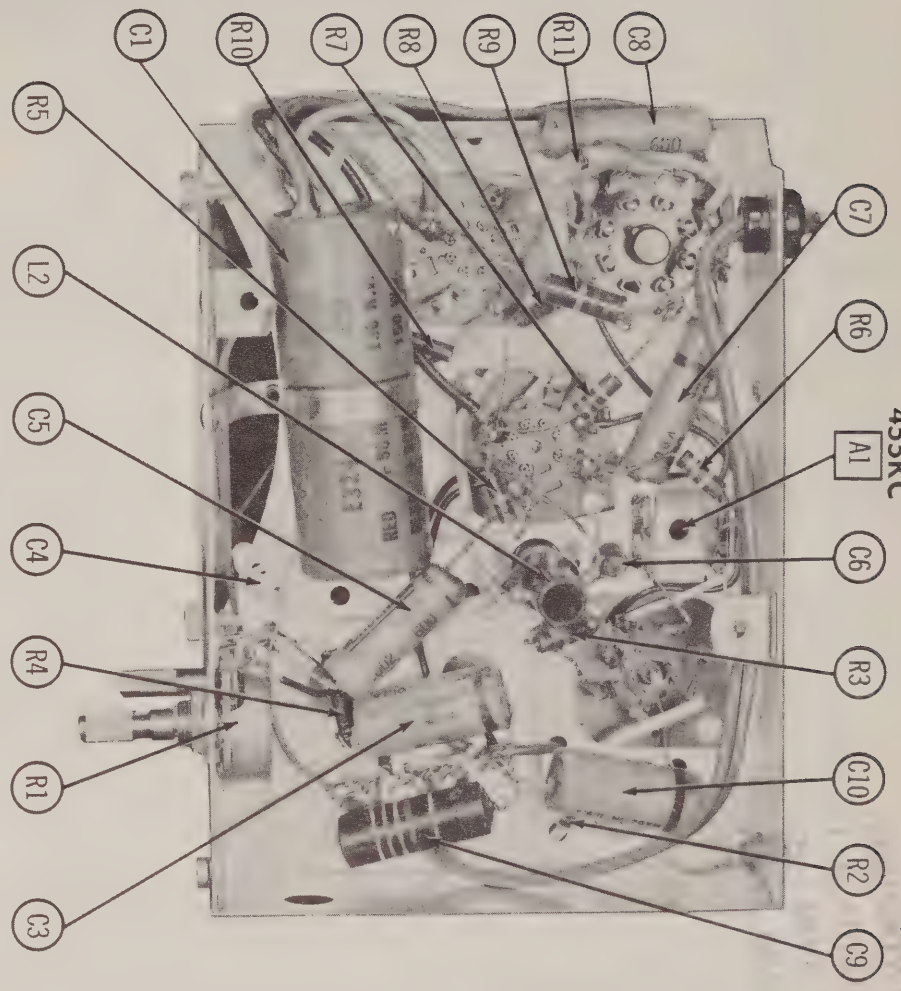
COILS (RF-IF)

ITEM No.	USE	DC RES.		REPLACEMENT DATA		NOTES
		PRI.	SEC.	Silvertone PART No.	MERIT PART No.	
L1	Ant. Coil	85Ω	3Ω	E615		
L2	Osc. Coil	.8Ω	6Ω	E614		
L3	IF Trans.	21Ω	21Ω	E623	BC-353	

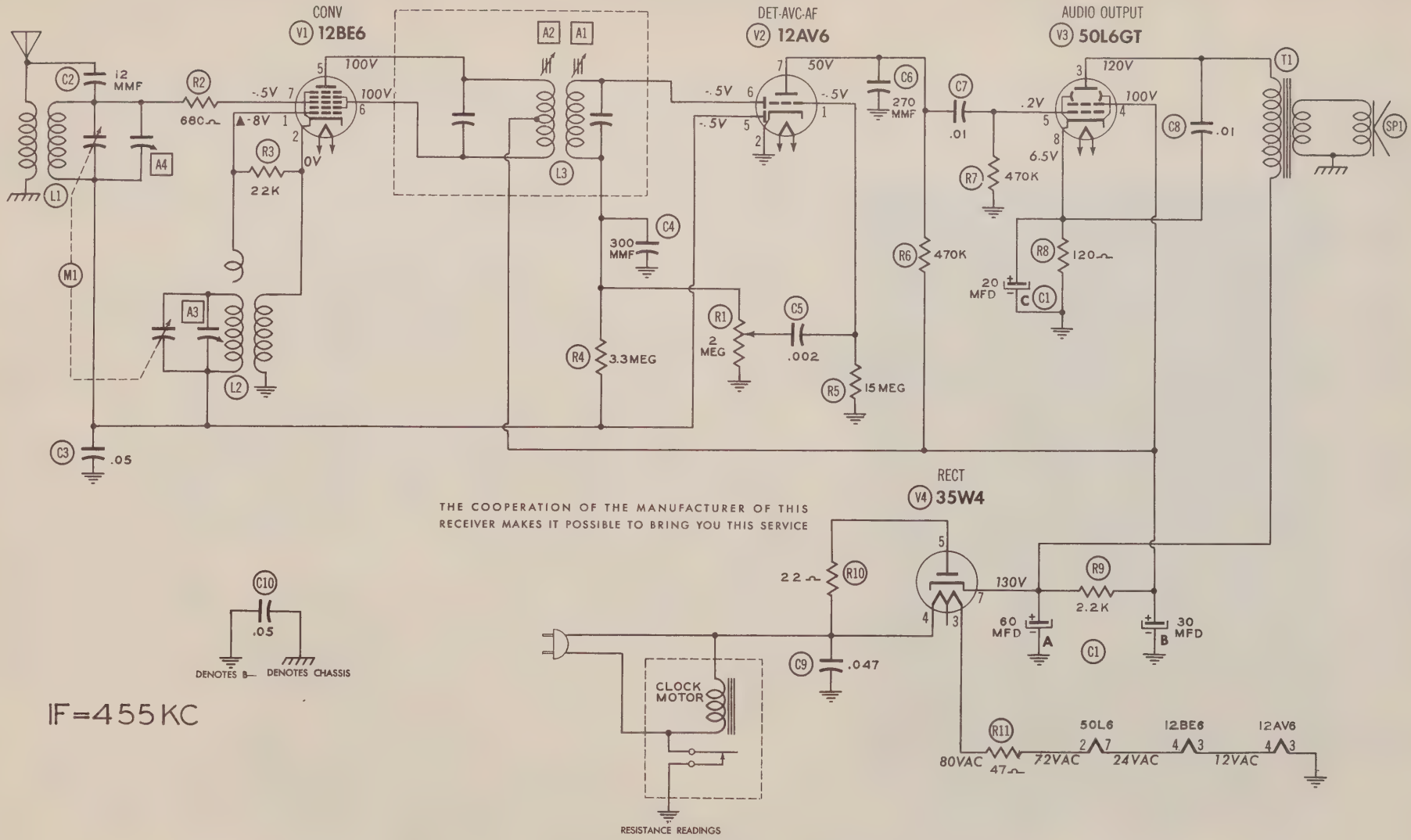
MISCELLANEOUS

ITEM No.	PART NAME	Silvertone PART No.	NOTES
M1	Tuning Capacitor	E352	24-378MMF, 28-198MMF
	Cabinet	E701	Brown
	Knob	E503	Selector (Brown)
	Knob	E504	Volume (Brown)
	Clock Timer Assy.	E131	

CHASSIS—BOTTOM VIEW



SILVERTONE
MODEL 2007 (Ch. 757.100)



RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
V 1	12BE6	22KΩ	.6Ω	20Ω	37Ω	†2200Ω	†2200Ω	5.3Meg	
V 2	12AV6	15 Meg	0Ω	0Ω	20Ω	5.3Meg	1.5Meg	†470KΩ	
V 3	50L6GT	INF	75Ω	†200Ω	†2200Ω	470KΩ	INF	37Ω	120Ω
V 4	35W4	INF	INF	122Ω	165Ω	187Ω	155Ω	300KΩ	

▲ TAKEN WITH VACUUM TUBE VOLTMETER
† MEASURED FROM PIN 7 OF V4

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198-12

1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1,000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ± 10% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.

PHOTOFACT* Folder

SILVERTONE MODELS 2105, A, 2145, A, B, 3105, 3145 (Ch. 132.024, -1, -2, -3, -4, -5, -6, -31)

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MODEL 3105

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*TRADE MARK

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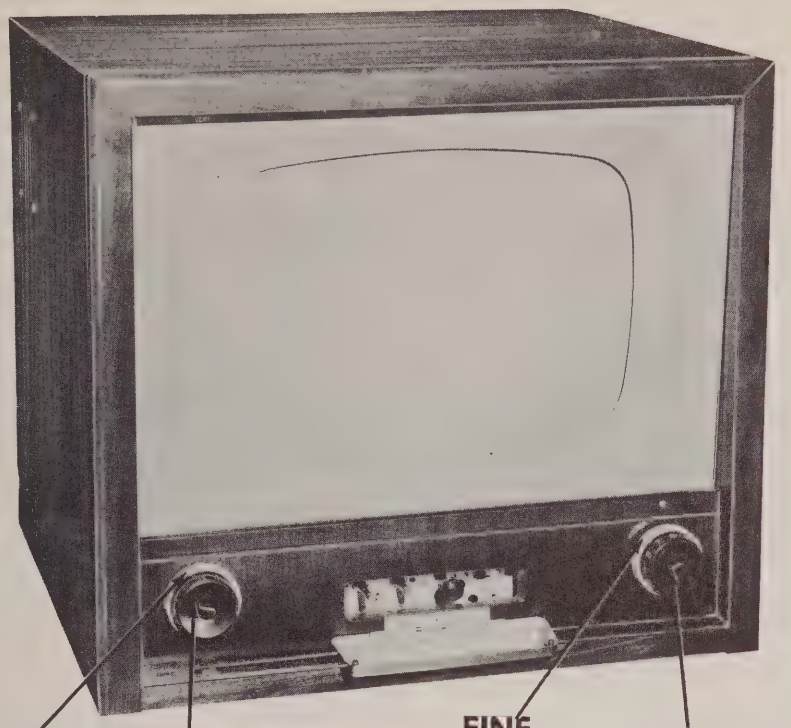

SILVERTONE MODEL 3105

TRADE NAME	Silvertone Models 2105, 2145 (Ch.132.024, -1, -2), 2105A, 2145A (Ch.132.024-3, -31), 2145B (Ch.132.024-4) 3105, 3145 (Ch.132.024-5, -6)
MANUFACTURER	Sears Roebuck & Co., 925 So. Homan Ave., Chicago, Ill.
TYPE SET	Television Receiver
TUBES	Twenty - Two
POWER SUPPLY	110-120 Volts AC-60 Cycle RATING 1.84 Amp. @ 117 Volts AC
TUNING RANGE	Channels 2 thru 13, Video IF 45.75MC, Sound IF 41.25MC (Intercarrier)

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SILVERTONE MODELS 2105, A, 2145, A, B, 3105, 3145 (Ch. 132.024, -1, -2, -3, -4, -5, -6, -31)

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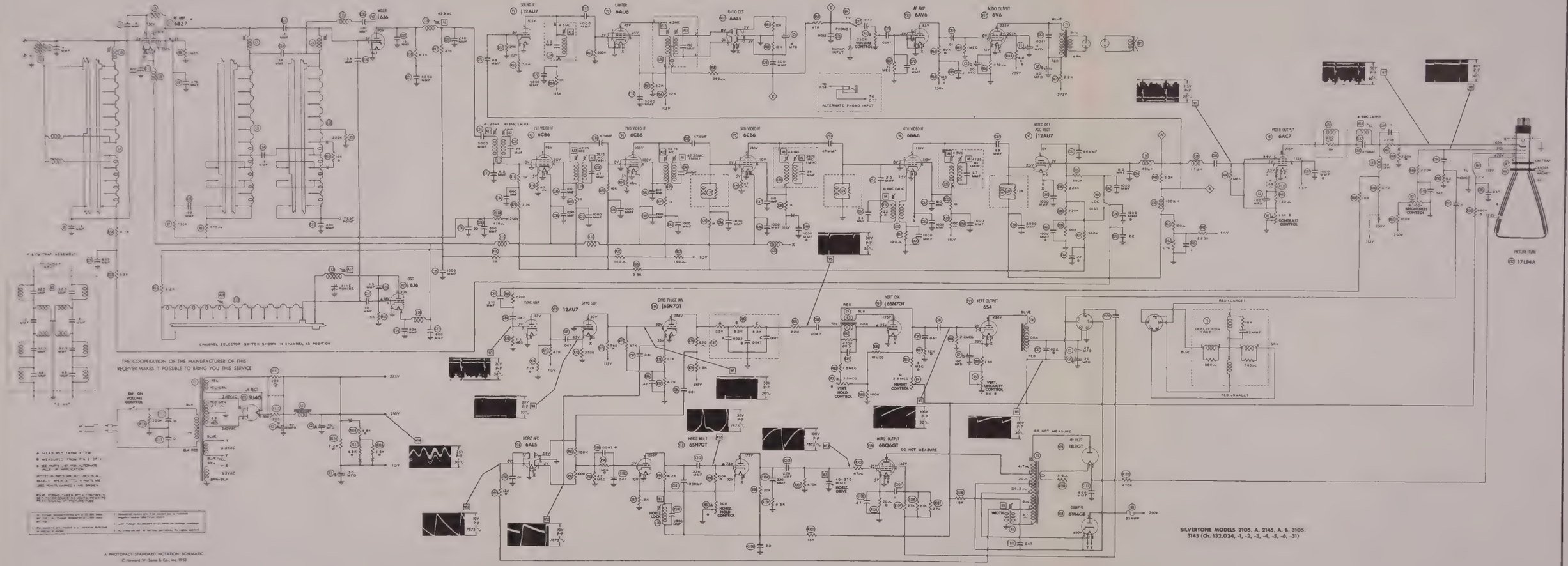
THE COOPERATION OF THE MANUFACTURER OF THIS RECEIVER MAKES IT POSSIBLE TO BRING YOU THIS SERVICE
CHANNEL SELECTOR SWITCH SHOWN IN CHANNEL 13 POSITION
SILVERTONE MODELS 2105, A, 2145, A, B, 3105, 3145 (Ch. 132.024, -1, -2, -3, -4, -5, -6, -31)
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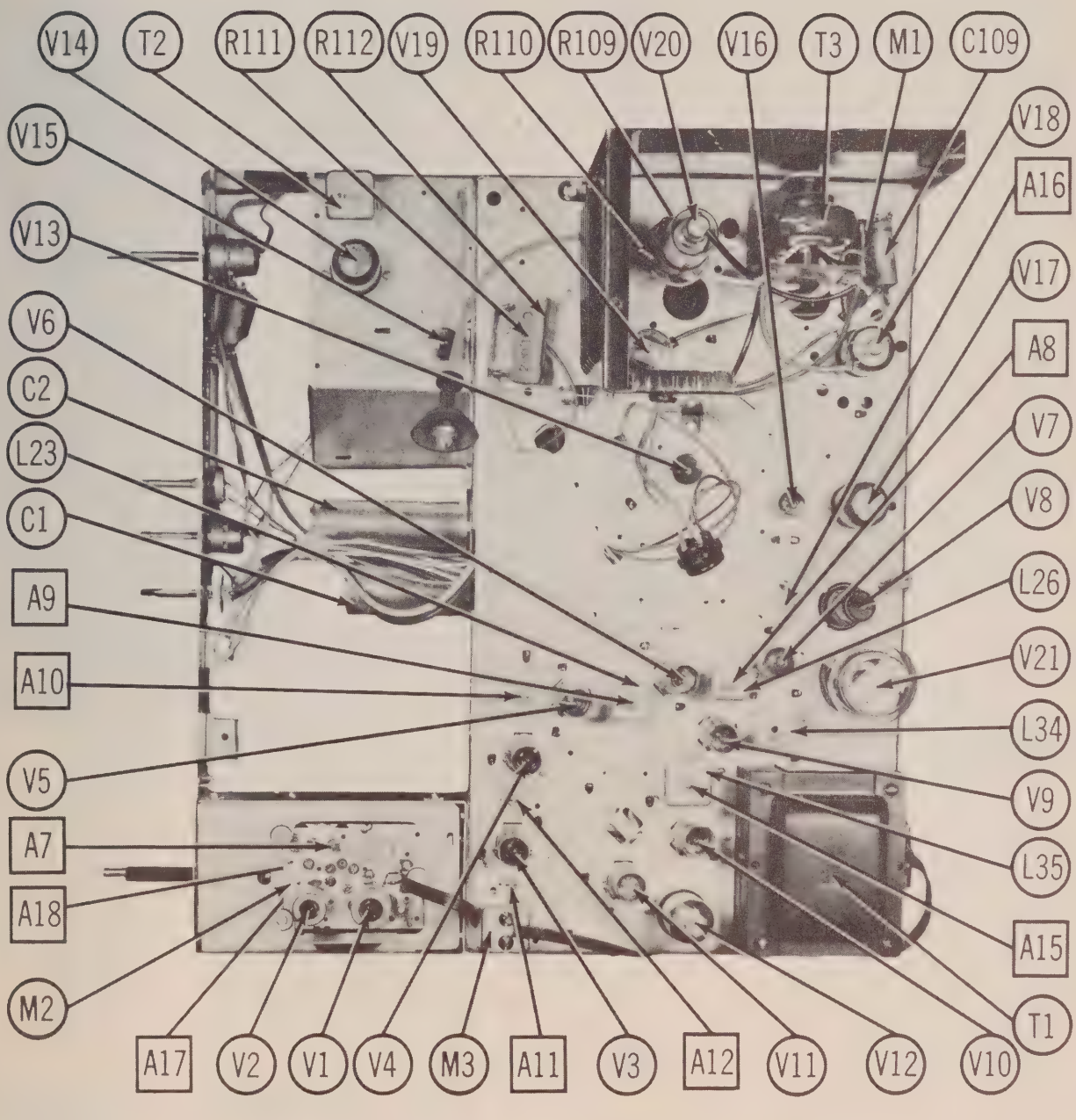
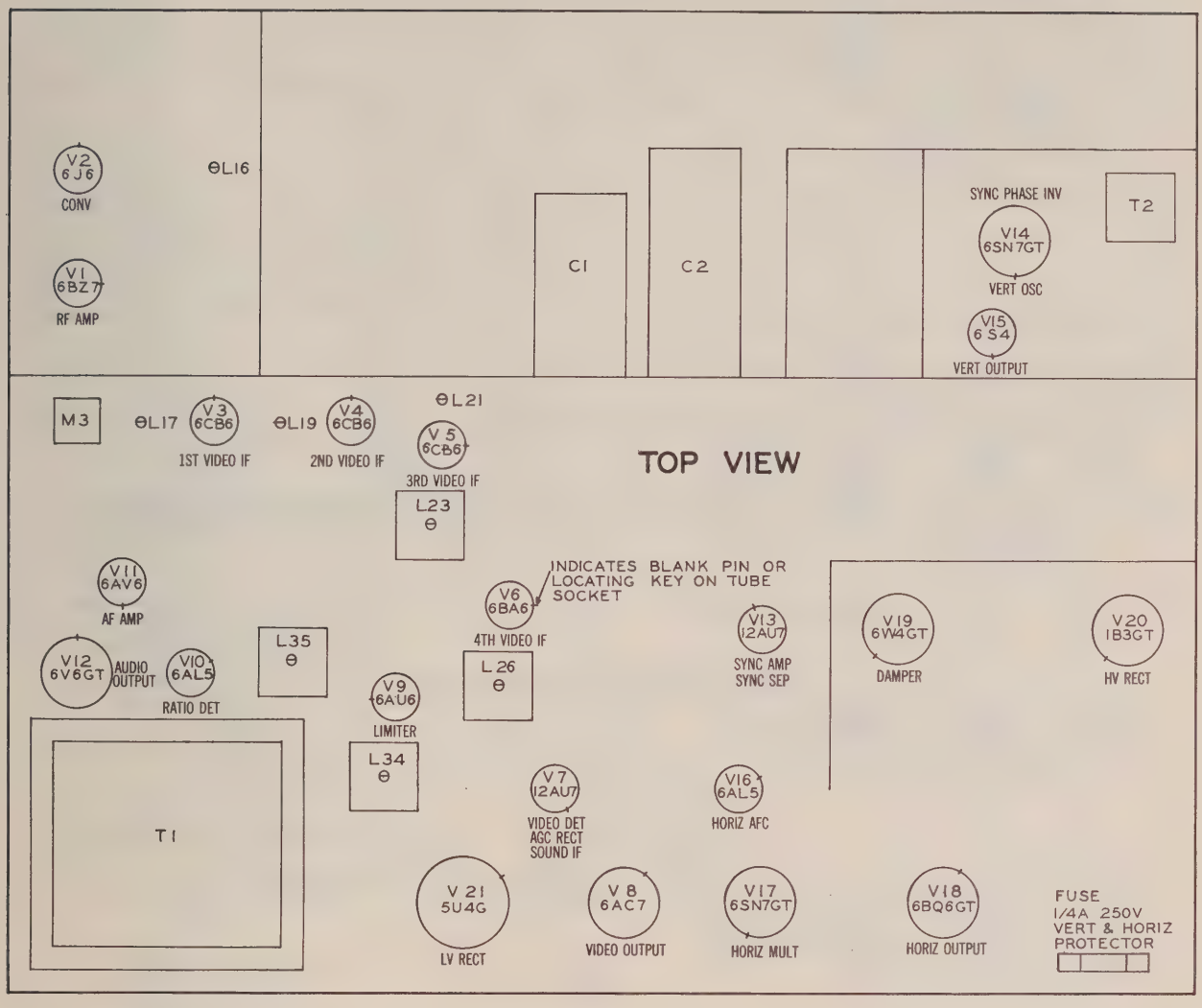


CHASSIS TOP VIEW

CHASSIS BOTTOM VIEW-CAPACITOR AND ALIGNMENT IDENTIFICATION

TUBE PLACEMENT CHART



TUBE FAILURE CHECK CHART

The following chart lists tubes whose failures are most likely to produce the indicated symptoms.
Refer to tube placement chart for location and type of tube.

POWER SUPPLY FAILURE
No Raster, no sound- V21

LOSS OF PICTURE OR SOUND
No pic., no sound, has raster- V2, V3, V4, V5, V6, V7
No pic., nossound, has snow-V1, V2, V3
No pic., has sound, has raster-V8, V22
Has pic., no sound- V7, V9, V10, V11, V12
Overloaded picture- V7

SYNC FAILURE
No vert. sync- V14
No horiz. sync- V14, V16, V17
No vert. or horiz. sync.- V13, V14

SWEEP FAILURE
No raster, has sound- V17, V18, V19, V20, V22, Fuse(M1)
No vert. deflection- V14, V15
Poor vert. linearity or foldover- V14, V15
Poor horiz. linearity or foldover- V17, V18, V19
Narrow picture- V17, V18, V19, V20, V21
Vert. off freq.- V14
Horiz. off freq.- V14, V16, V17

ALIGNMENT INSTRUCTIONS

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

The high voltage lead should be securely taped and kept away from the chassis. Do not remove the horizontal oscillator tube to disable the high voltage.

VIDEO IF ALIGNMENT

Remove the converter tube (V2) from its socket and replace with a 6J6 which has pin 1 removed.
This will disable the local oscillator and reduce the possibility of erroneous indications.
Connect the negative lead of a 3 volt battery to the junction of R36 and R38. Connect the positive lead to chassis.
Set the Local-Distance switch to local position.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT VTVM	ADJUST	REMARKS
1.	Direct	High side to an ungrounded tube shield floating over dummy converter tube. Low side to chassis.	39.75MC (Unmod.)	Any	DC probe to point (A). Common to point (B)	A1, A2	Adjust for MINIMUM deflection.
2.	"	"	44.6MC	"	"	A3, A4	"
3.	"	"	47.25MC	"	"	A5, A6	"
4.	"	"	45.3MC	"	"	A7	Preset core to maximum clockwise position. Adjust for maximum deflection.
5.	"	"	45MC	"	"	A8	Adjust for maximum deflection.
6.	"	"	43.1MC	"	"	A9	"
7.	"	"	45.75MC	"	"	A10	"
8.	"	"	42.25MC	"	"	A11, A12	"

OVERALL VIDEO IF RESPONSE CHECK

Connect the synchronized sweep voltage from the signal generator to the horizontal input of the oscilloscope for horizontal deflection.

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
9.	Direct	High side to an ungrounded tube shield floating over dummy converter tube. Low side to chassis.	44MC (10MC Swp)	41.6MC 42.25MC 42.75MC 45.0MC 45.75MC	Any	Vert. Amp. to point (A). Low side to chassis.		Check for response curve similar to Fig. 1 with markers as shown. If necessary retouch A7 through A12 for desired response.
10.	"	"	44MC (10MC Swp)	41.6MC 42.25MC	"	"		Increase scope gain and decrease sweep width to obtain expanded trace of low frequency end of response curve. If necessary retouch A4 for double humped curve as in Fig. 2.

SOUND IF ALIGNMENT USING AM SIGNAL GENERATOR AND VTVM

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT VTVM	ADJUST	REMARKS
11.	.01MFD	High side to point (A). Low side to chassis.	4.5MC (Unmod.)	Any	DC probe to point (C). Common to chassis.	A13, A14	Adjust for maximum deflection.
12.	"	"	"	"	DC probe to point (D). Common to chassis.	A15	Adjust for zero reading. A positive and negative reading will be obtained on either side of the correct setting.

SOUND IF ALIGNMENT USING FM SIGNAL GENERATOR AND OSCILLOSCOPE

Use frequency modulated signal with 60% modulation and 450KC sweep. Use 120% sawtooth voltage in scope for horizontal deflection.

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
11.	.01MFD	High side to point (A). Low side to chassis.	4.5MC (450KC Swp)	4.5MC	Any	Vert. Amp. to point (C). Low side to chassis.	A13, A14	Disconnect stabilizer capacitor C5. Adjust for curve of maximum amplitude and symmetry as in Fig. 3.
12.	"	"	"	"	"	Vert. Amp. to point (D). Low side to chassis.	A15	Reconnect capacitor C5. Adjust so that 4.5MC occurs at center of crossover lines as in Fig. 4. SLIGHTLY retouch A14 for maximum amplitude and straightness of crossover lines.

4.5MC TRAP ADJUSTMENT

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT VTVM	ADJUST	REMARKS
13.	.01MFD	High side to point (A). Low side to chassis.	4.5MC (Unmod.)	Any	DC probe thru detector (Fig. 5). to pin 11 of picture tube. Common to chassis.	A16	Adjust for MINIMUM deflection.

ALIGNMENT INSTRUCTIONS (CONT.)

OSCILLATOR ALIGNMENT

Remove the dummy converter tube and replace the original 6J6 in its socket.
Connect the synchronized sweep voltage from the signal generator to the horizontal input of the oscilloscope for horizontal deflection.
The sweep generator output lead should be terminated with its characteristic impedance, usually 50 ohms.
Set the fine tuning control to the mid-position of its range.

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
14.	Two 120Ω Carbon Resistors	Across antenna terminals with 120Ω in each lead.	213MC (10MC Swp)	215.75MC	13	Vert. amp. to point (A). Low side to chassis.	A17	Adjust to place sound marker in notch on low frequency side of response curve as in Fig. 6.
15.	"	"	207MC (10MC Swp)	209.75MC	12	"		Check for sound marker placement as in Fig. 6. If necessary make compromise adjustment of A17 for any individual channel, then check all other high band channels to see that they have not been seriously affected.
			201MC (10MC Swp)	203.75MC	11			
			195MC (10MC Swp)	197.75MC	10			
			189MC (10MC Swp)	191.75MC	9			
			183MC (10MC Swp)	185.75MC	8			
			177MC (10MC Swp)	179.75MC	7			
16.	"	"	85MC (10MC Swp)	87.75MC	6	"	A18	Adjust to place sound marker in notch on low frequency side of response curve as in Fig. 6.
17.	"	"	79MC (10MC Swp)	81.75MC	5	"		Check for sound marker placement as in Fig. 6. If necessary make compromise adjustment of A18 for any individual channel, then check all other low band channels to see that they have not been seriously affected.
			69MC (10MC Swp)	71.75MC	4			
			63MC (10MC Swp)	65.75MC	3			
			57MC (10MC Swp)	59.75MC	2			

THE RF AND MIXER PORTION OF THIS RECEIVER HAS BEEN PROPERLY ALIGNED AT THE FACTORY AND IS VERY STABLE: ALIGNMENT OF THIS PORTION SHOULD NOT BE REQUIRED IN THE FIELD.

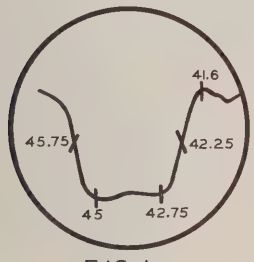


FIG. 1

FIG. 2

FIG. 3

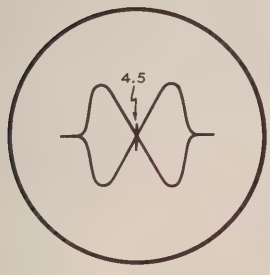


FIG. 4

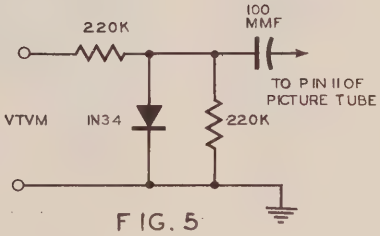


FIG. 5

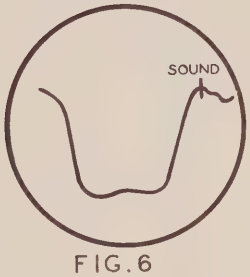
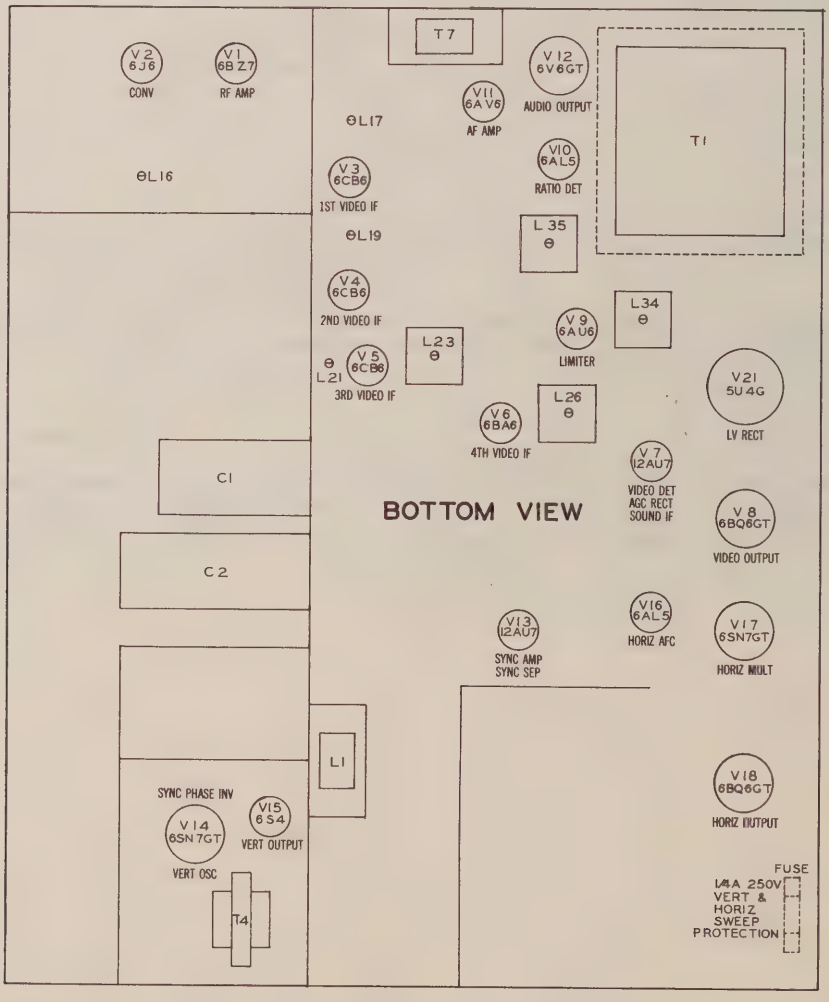


FIG. 6

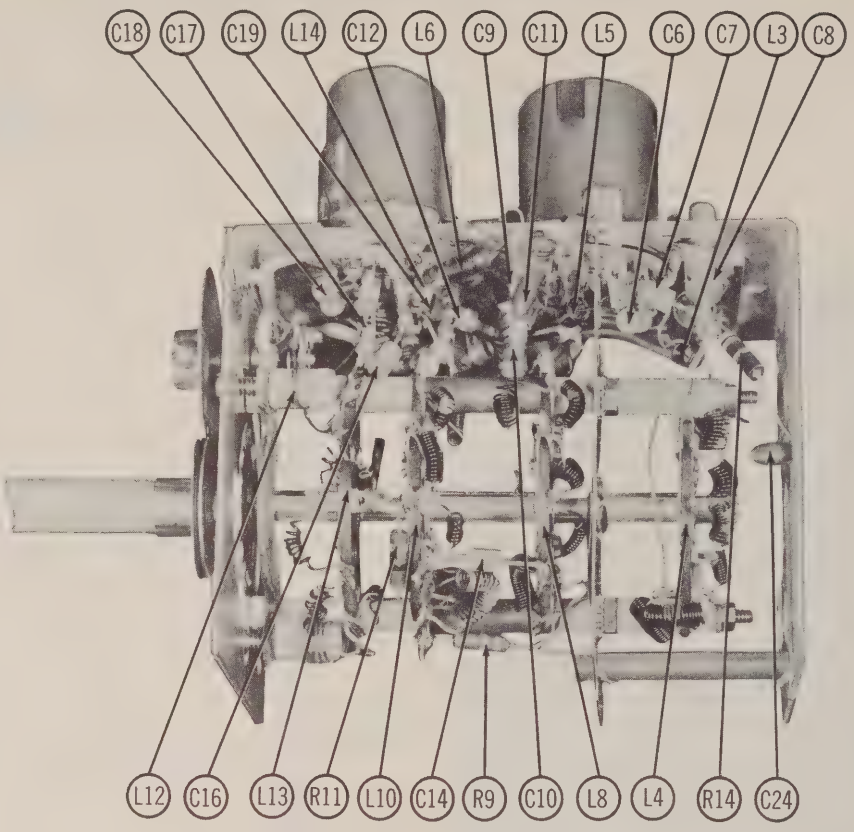
RESISTANCE MEASUREMENTS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V 1	6BZ7	†1KΩ	†450KΩ	INF	.1Ω	0Ω	INF	1.1 Meg	0Ω	0Ω
V 2	6J6	†11KΩ	†11KΩ	0Ω	.1Ω	220KΩ	15KΩ	0Ω		
V 3	6CB6	900KΩ	47Ω	0Ω	.1Ω	†3.3KΩ	†3.3KΩ	0Ω		
V 4	6CB6	900KΩ	47Ω	.1Ω	0Ω	†3.2KΩ	†3.2KΩ	0Ω		
V 5	6CB6	900KΩ	47Ω	0Ω	.1Ω	†3KΩ	†3KΩ	0Ω		
V 6	6BA6	2Ω	0Ω	.1Ω	0Ω	†3.1KΩ	†3.1KΩ	120Ω		
V 7	12AU7	†540KΩ	8.1KΩ	4.8KΩ	.1Ω	.1Ω	†3KΩ	120KΩ	150Ω	0Ω
V 8	6AC7	0Ω	0Ω	300Ω	1 Meg	500Ω	†1.9KΩ	.1Ω	†7KΩ	
V 9	6AU6	680KΩ	0Ω	.1Ω	0Ω	†12KΩ	†12KΩ	0Ω		
V 10	6AL5	10KΩ	10KΩ	0Ω	.1Ω	INF	0Ω	INF		
V 11	6AV6	10 Meg	0Ω	0Ω	.1Ω	0Ω	0Ω	†280KΩ		
V 12	6V6GT	INF	.1Ω	†2.5KΩ	†6.8KΩ	1 Meg	INF	0Ω	470Ω	
V 13	12AU7	†25KΩ	2.2Meg	0Ω	.1Ω	.1Ω	†70KΩ	0Ω	270KΩ	0Ω
V 14	6SN7GT	2.3Meg	#1.9Meg	0Ω	52KΩ	†4.5KΩ	5.8KΩ	.1Ω	0Ω	
V 15	6S4	INF	3KΩ	2.2Meg	.1Ω	0Ω	2.2Meg	INF	INF	#3.5KΩ
V 16	6AL5	4.8Meg	4.8Meg	.1Ω	0Ω	12KΩ	0Ω	12KΩ		
V 17	6SN7GT	5.7Meg	#25KΩ	1.2KΩ	110KΩ	#140KΩ	1.2KΩ	0Ω	.1Ω	
V 18	6BQ6GT	INF	0Ω	INF	†9KΩ	470KΩ	INF	.1Ω	50Ω	Top Cap #20Ω
V 19	6W4GT	INF	INF	280KΩ	INF	†240Ω	INF	#25Ω	#25Ω	
V 20	1B3GT	PINS 1 - 8 HAVE INF RESISTANCE								Top Cap #435Ω
V 21	5U4G	INF	19KΩ	INF	29Ω	1 Meg	27Ω	INF	19KΩ	
V 22	17LP4A	0Ω	280KΩ	Pin 6 †1.9KΩ	Pin 10 #680KΩ	Pin 11 120KΩ	Pin 12 .1Ω			

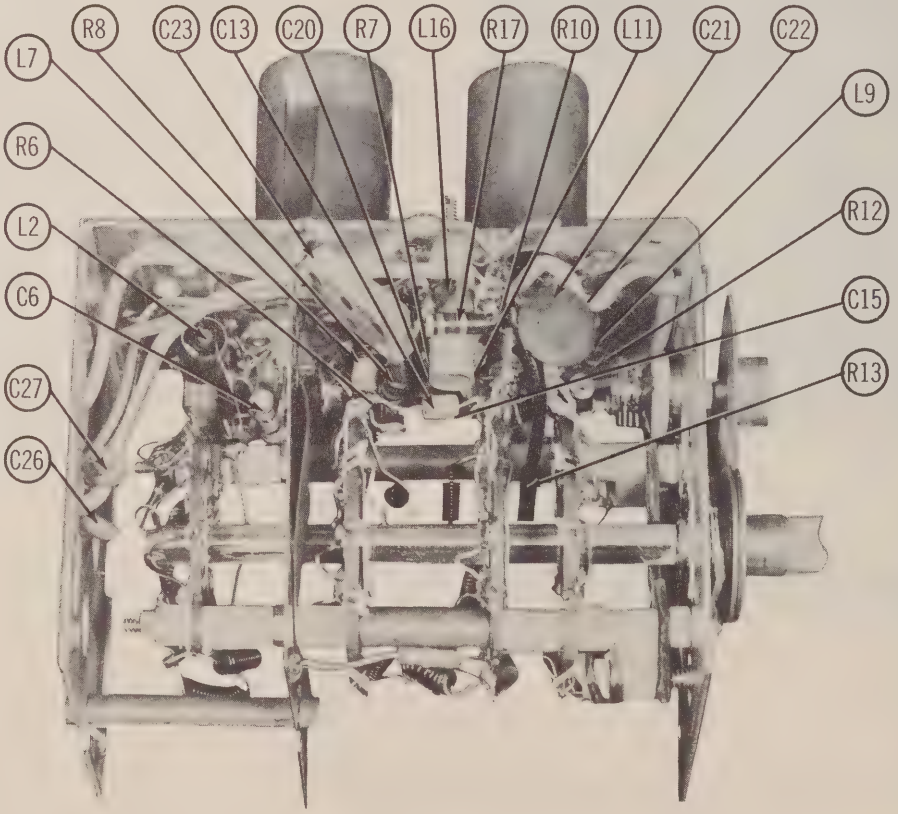
MEASURED WITH LOCAL DISTANCE SWITCH IN LOCAL POSITION
† MEASURED FROM PIN 8 OF V21
# MEASURED FROM PIN 3 OF V19



TUBE PLACEMENT CHART

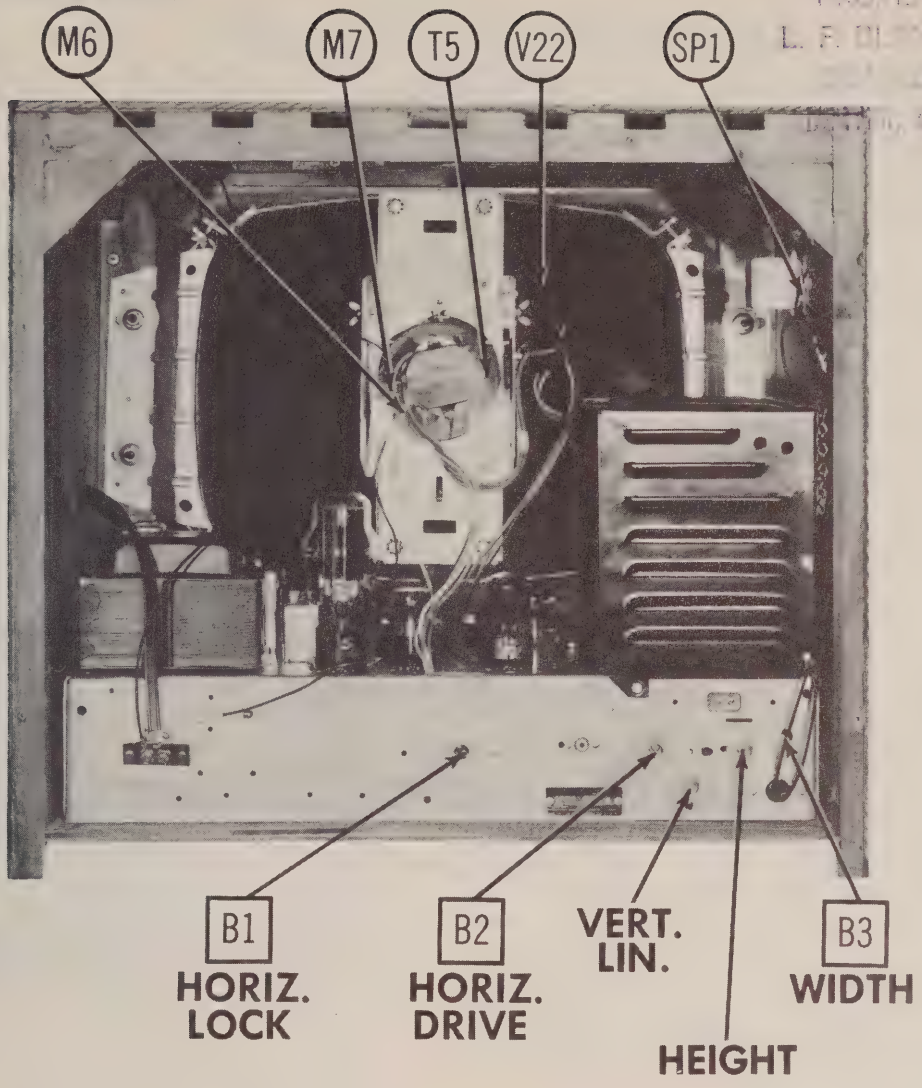


RF TUNER-RIGHT SIDE



RF TUNER-LEFT SIDE

PROPERTY OF
L. F. DIETZENSHIRE
[illegible] BLADE ST.
[illegible], COLORADO



CABINET-REAR VIEW

HORIZONTAL SWEEP CIRCUIT ADJUSTMENTS

Turn the set on and tune in a TV station, preferably a test pattern.

Set the horizontal hold control at the mid-point of its range and adjust the horizontal lock slug (B1) until the picture synchronizes horizontally.

Turn B1 clockwise until the picture loses sync, then counter clockwise until the picture just falls into sync.

Turn the horizontal hold control fully counter clockwise and momentarily switch to another channel and back again. The picture should be out of sync. Note the number of diagonal bars present in the picture. Repeat the procedure with the horizontal hold in extreme clockwise rotation and again note the number of diagonal bars. They should be the same for both positions of the horizontal hold. Adjust B1 for this condition.

Adjust the horizontal drive trimmer (B2) counter clockwise as far as possible without the presence of a vertical white line or compression of the center of the picture.

Ad just the width slug (B3) for a picture slightly wider than necessary to fill the picture mask horizontally.

CHASSIS BOTTOM VIEW-RESISTOR AND INDUCTOR IDENTIFICATION

PARTS LIST AND DESCRIPTIONS

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA: Silvertone PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RTMA BASE TYPE	NOTES
V1A	RF Amplifier	6BZ7	6BZ7	9AJ	
B	RF Amplifier	6BQ7	6BQ7	9AJ	
V2	Converter	6J6	6J6	7BF	
V3	1st. Video IF Amp.	6CB6	6CB6	7CM	
V4	2nd. Video IF Amp.	6CB6	6CB6	7CM	
V5	3rd. Video IF Amp.	6CB6	6CB6	7CM	
V6	4th. Video IF Amp.	6BA6	6BA6	7BK	
V7	Video Detector - AGC Rectifier - Sound IF Amp.	12AU7	12AU7	9A	
V8	Video Output	6AC7	6AC7	8N	
V9	Limiter	6AU6	6AU6	7BK	
V10	Ratio Detector	6AL5	6AL5	6BT	
V11	AF Amplifier	6AV6	6AV6	7BT	
V12	Audio Output	6V6GT	6V6GT	7S	
V13	Sync Amplifier - Sync Separator	12AU7	12AU7	9A	
V14	Sync Phase Inv. - Vert. Oscillator	6SN7GT	6SN7GT	8BD	
V15	Vert. Output	6S4	6S4	9AC	
V16	Horiz. AFC	6AL5	6AL5	6BT	
V17	Horiz. Mult.	6SN7GT	6SN7GT	8BD	
V18	Horiz. Output	6BQ6GT	6BQ6GT	6AM	
V19	Damper	6W4GT	6W4GT	4CG	
V20	HV Rectifier	1B3GT	1B3GT	3C	
V21	LV Rectifier	5U4G	5U4G	5T	

CATHODE-RAY TUBE

ITEM No.	REPLACEMENT DATA: Silvertone PART No.	REPLACEMENT DATA: SYLVANIA PART No.		RTMA BASE TYPE	NOTES
V22	17VP4	17VP4 17LP4		12C 12C	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING CAP.	RATING VOLT	REPLACEMENT DATA: Silvertone PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	MALLORY PART No.	SPRAGUE PART No.	NOTES
C1A	■60	400	N22422-13	AFH4-88				FP431.4	TVL-4709	
B	▲50	350		PRS450/40				TC62		
C	▲5	450								
D	20	25								
C2A	■80	350	N22422-14	AFH3-182		CO37		FP420.6	TVL-4711	
B	▲50	350		PRS450/40		BRH501		TC75		
C	▲20	450								
D	100	50								
C3	20	450	N25452	PRS450/20		BR2045A		TC75	TVA-1709	
C4	100	25	N25454	PRS25/100		BRH251A		TC2501	TVA-1207	
C5	4	150	N25453	PRS150/4		BR415		TC40	TVA-1402	
C6	4						NP0K-040			
C7	1.6									
C8	7.5									
C9	470									
C10	100			SI100	D6-101	TM5T1	GP1K-101	UC-531	5GA-T1	
C11	800			BPD-0008	DD-801	TM5T8	801-001	DC-521	5HK-D1	
C12	.3									
C13	.56									
C14	1.6									
C15	470			SI470	D6-471	TM5T5	GP2K-471	UC-5347	5GA-T47	
C16	.39									
C17	10			SI10N750	TCN-10		N750K-100	NT-541	5TCU-Q1	
C18	1.5						N330K-1R5			
C19	800			BPD-0008	DD-801	TM5T8	801-001	DC-521	5HK-D1	
C20	100			SI100N750	TCN-101			NT-531	5TCU-T1	
C21	5000			BPD-005	DD-501	TM5D5	811-005	DC-525	5HK-D5	
C22	15			SI15NP0	TCZ-15		NP0K-150	ZT-5415	5TCC-Q15	
C23	240	500		1469-00025		5R5T25		MCB240		
C24	800			BPD-0008	DD-801	TM5T8	801-001	DC-521	5HK-D1	
C25	1000			BPD-001	DD-102	TM5D1	801-001	DC-521	5HK-D1	
C26	800			BPD-0008	DD-801	TM5T8	801-001	DC-521	5HK-D1	
C27	800			BPD-0008	DD-801	TM5T8	801-001	DC-521	5HK-D1	
C28	1000			BPD-001	DD-102	TM5D1	801-001	DC-521	5HK-D1	Note 1
C29	.22	200		P488-22		PTE4P22		PT4025	2TM-P22	
C30	.22	400		P488-22		PTE4P22		PT4025	2TM-P22	
C31	5000			BPD-005	DD-502	TM5D5	811-005	DC-525	5HK-D5	
C32	36						N330K-360			
C33	8.2						NP0K-8R2			
C34	1000			BPD-001	DD-102	TM5D1	801-001	DC-521	5HK-D1	
C35	610									
C36	1000			BPD-001	DD-102	TM5D1	801-001	DC-521	5HK-D1	
C37	1000			BPD-001	DD-102	TM5D1	801-001	DC-521	5HK-D1	
C38	47						N330K-470			
C39	47			SI47	D6-470	5R5Q5	GP1K-470	UC-5447	5GA-Q47	
C40	1000			BPD-001	DD-102	TM5D1	801-001	DC-521	5HK-D1	
C41	610									
C42	1000			BPD-001	DD-102	TM5D1	801-001	DC-521	5HK-D1	
C43	1000			BPD-001	DD-102	TM5D1	801-001	DC-521	5HK-D1	
C44	39						N330K-390			
C45	47			SI47	D6-470	5R5Q5	GP1K-470	UC-5447	5GA-Q47	
C46	1000			BPD-001	DD-102	TM5D1	801-001	DC-521	5HK-D1	
C47	610									
C48	1000			BPD-001	DD-102	TM5D1	801-001	DC-521	5HK-D1	
C49	1000			BPD-001	DD-102	TM5D1	801-001	DC-521	5HK-D1	Note 5
C50	47			SI47	D6-470	5R5Q5	GP1K-470	UC-5447	5GA-Q47	
C51	2.2				TCZ-2.2		NP0K-2R2		5TCCB-V22	
C52	36						N330K-360			
C53	610									
C54	1000			BPD-001	DD-102	TM5D1	801-001	DC-521	5HK-D1	
C55	1000			BPD-001	DD-102	TM5D1	801-001	DC-521	5HK-D1	
C56	1000			BPD-001	DD-102	TM5D1	801-001	DC-521	5HK-D1	
C57	68						N220L-680			

PARTS LIST AND DESCRIPTIONS (Continued)

CAPACITORS (CONT.)

ITEM No.	RATING CAP.	RATING VOLT	REPLACEMENT DATA Silvertone PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	MALLORY PART No.	SPRAGUE PART No.	NOTES
C58	5000			BPD-005	DD-502	TM5D5	811-005	DC-525	5HK-D5	
C59	8.2						NP0K-8R2			
C60	1000			BPD-001	DD-103	TM5D1	801-001	DC-521	5HK-D1	
C61	68						N220L-680			
C62	1000			BPD-001	DD-103	TM5D1	801-001	DC-521	5HK-D1	
C63	1000			BPD-001	DD-102	TM5D1	801-001	DC-521	5HK-D1	Note 2
C64	.33	300		PTE4W33				PT4025	3TM-P33	Note 3
C65	.1	200		P288-1	DF-104	PJ2P1		PT401	2TM-P1	
C66	.1	200		P288-1	DF-104	PJ2P1		PT401	2TM-P1	
C67	1000			BPD-001	DD-102	TM5D1	801-001	DC-521	5HK-D1	Note 3
C68	47			SH47NP0	TCZ-47		NP0K-470	ZT-5347	5TCC-Q47	
C69	.1	400		P488-1	DF-104	PTE4P1		PT401	4TM-P1	
C70	.047	400		P488-047	DF-503	PTE4S47		PT4147	4TM-S47	
C71	68						N220L-680			
C72	5000			BPD-005	DD-502	TM5D5	811-005	DC-525	5HK-D5	
C73	1000			BPD-001	DD-102	TM5D1	801-001	DC-521	5HK-D1	
C74	5000			BPD-005	DD-502	TM5D5	811-005	DC-525	5HK-D5	
C75	500	500		1468-0005	D6-501	5W5T5	GP2K-501	MC345	1FM-35	
C76	.0033	600		P688-0033	D6-332	PTE6D33	GP2-333-332	PT6233	6TM-D33	
C77	.047	200		P288-047	DF-503	PTE4S47		PT4147	2TM-S47	
C78	.0047	600		P688-0047	D6-472	PTE6D47	GP2-333-472	PT6247	6TM-D47	
C79	47	500		1468-00005	D6-470	5W5Q5	GP1K-470	MC325	1FM-45	
C80	.1	400		P488-1	DF-104	PTE4P1		PT401	4TM-P1	
C81	.01	400		P488-01	D6-103	PTE4S1	GP2-333-103	PT411	4TM-S1	
C82	.0047	600		P688-0047	D6-472	PTE6D47	GP2-333-472	PT6247	6TM-D47	
C83	.047	500		1468-0003	D6-473	5W5T5	GP2K-371	MC341	1FM-33	
C84	.047	400		P488-047	DF-503	PTE4S47		PT4147	4TM-S47	
C85	.047	400		P488-047	DF-503	PTE4S47		PT4147	4TM-S47	
C86	.47	200		P288-47		PJ2F5		PT405	2TM-P47	
C87A	.0022		} P688-0022			PTE6D22		PT6222		
B	.0047		} ∗N24166 P688-0047	∗PC-100		PTE6D47	∗1406-01	PT6247	∗ to 101C1	
C	.0047		P688-0047			PTE6D47		PT6247		
C88	.0047	600		1464-005		1DR5D4		MCB465	MS-25	
C89	.0015	600		P688-0015	D6-152	PTE6D15	GP2L-152	MC256	6TM-D15	
C90	.047	600		P688-047	DF-503	PTE6S47		PT6147	6TM-S47	
C91	.1	600		P688-1	DF-104	PTE6P1		PT601	6TM-P1	
C92	.022	600		P688-022		PTE6S22		PT6122	6TM-S22	Note 6
C93	1	1000		P1068-1		PTE10P1		PT1601	10TM-P1	
C94	.1	400		P488-1	DF-104	PTE4P1		PT401	4TM-P1	
C95	.047	600		P688-047	DF-503	PTE6S47		PT6147	6TM-S47	
C96	.001	600		P688-001	D6-102	PTE6D1	GP2L-102	PT621	6TM-D1	
C97	.001	600		P688-001	D6-102	PTE6D1	GP2L-102	PT621	6TM-D1	
C98	.01	400		P488-01	D6-103	PTE4S1	GP2-333-103	PT411	4TM-S1	
C99	.047	400		P488-0047	D6-472	PTE6D47	GP2-333-472	PT6247	6TM-D47	Note 4
C100	.047	400		P488-047	DF-503	PTE4S47		PT4147	4TM-S47	
C101	100	500		1468-0001	D6-101	5W5T1	GP1K-101	MC335	1FM-31	
C102	3900	500		1464-004		1DR5D4		MCB463	MS-24	
C103	330	500		1469-00035						
C104	330	500		1469-00035						
C105	270	500		1469-0003		5R5T3		MCB241	MS-33	
C106	.22	600		684-25		PTE5P25		PT6025	6TM-P25	
C107	.1	600		P688-1	DF-104	PTE6P1		PT601	6TM-P1	
C108	.47	200		P288-47		PTE2P5		PT405	2TM-P47	
C109	.1	400		P488-1	DF-104	PTE4P1		PT401	4TM-P1	
C110	.047	600		P688-047	DF-503	PTE6S47		PT6147	6TM-S47	
C111	30000			HV30--	TV3-5003	MM-C3075	413-501		30QX-T5	
C112	.01	500		6892GXY-01		PJ5B1		PT611	6TM-S1	
C113	.01	500		6892GXY-01		PJ5B1		PT611	6TM-S1	

Note 1. Not used in Ch. 132.024, 132.024-1.
Note 2. Not used in Ch. 132.024, 132.024-1, -2, -3, -31
Note 3. Not used in Ch. 132.024
Note 4. This item changed to .01MFD in Ch. 132.024 and 132.024-1.
Note 5. Not used in all Models.
Note 6. Some Models use .033MFD in this application.
∗ Items C87A, C87B, C87C, R80A, R80B, R80C are combined in one unit.

CONTROLS

ITEM No	RATING RESISTANCE	RATING WATTS	REPLACEMENT DATA Silvertone PART No.	IRC PART No.	CLAROSTAT PART No.	CENTRALAB PART No.	MALLORY PART No.	INSTALLATION NOTES
R1A	1500Ω	½	N32464-49	QJ-427 ††			UP152L	Contrast-Panel-Note 1
B	250KΩ	½					UR254A	Volume-Rear
C	Switch						US 26	Attach to R1B
R2A	100KΩ	½	N32464-40	QU-128	AG-49-8	AB-40	U-41	Brightness-Note 1
B	Shaft		Not Req.	Not Req.	KSS-3	AK-4	Not Req.	Attach to R2A
R3A	50KΩ	½	N32464-42	QJ-430†			UP54L	Horiz. Hold-Panel-Note 1 & 4
B	7.5Meg	½					UR2EL	Vert. Hold-Rear
R4A	2.5Meg	½	N32464-43	QU-239	AG-84-8	AB-83	SU-565	Height-Note 1 & 2
B	Shaft		Not Req.	Not Req.	FKS-1/4	AK-1	Not Req.	Attach to R4A
R5A	3000Ω	½	N32464-41	QU-118	AG-15-8	AB-8	U-8	Vert. Linearity -Note 1 & 2
B	Shaft		Not Req.	Not Req.	FKS-1/4	AK-1	Not Req.	Attach to R5A
R1A	1500Ω	½	N32464-37	QJ-340∗	RTV-352		UP152L	Contrast-Panel-Note 3
B	250KΩ	½					UR254A	Volume-Rear
C	Switch						UB-26	Attach to R1B
R2A	100KΩ	½	N32464-34	QU-128	AG-49-8	AB-40	U-41	Brightness-Note 3
B	Shaft		Not Req.	Not Req.	KSS-3	AK-4	Not Req.	Attach to R2A
R3AA	25KΩ	½	N32464-38	QU-120	AG-40-8	AB-26	U-29	Horiz. Hold-Note 3
AB	Shaft		Not Req.	Not Req.	KSS-3	AK-4	Not Req.	Attach to R3AA
R3BA	1.5Meg	½	N32464-36	QU-136	AG-83-8	AB-75	U-155	Vert. Hold-Note 3
BB	Shaft		Not Req.	Not Req.	KSS-3	AK-4	Not Req.	Attach to R3BA

Note 1. Used only in chassis No. 132.024-5 & 132.024-6.
Note 2. In chassis No. 132.024, 132.024-1, 132.024-2, 132.024-3, 132.024-31,R4A & R5A are combined into a dual concentric.
IRC replacement-QJ-71∗∗; Clarostat Replacement-RTV-359.
Note 3. Used only in chassis No. 132.024,132.024-1, 132.024-2, 132.024-3 & 132.024-31.
∗ CONCENTRIKIT EQUIVALENT-KIT K-2, BASE ELEMENT & SHAFTS B17-110 & P1-204 (Panel)
B13-130 & R1-220 (Rear) & SWITCH 76-1.
∗∗ CONCENTRIKIT EQUIVALENT-KIT K-3, BASE ELEMENT & SHAFTS W11-112 & P3-114 (Panel)
B11-239 & R2-124 (Rear).
Note 4. Early production models use 25KΩ - Horiz. Hold; 1.5Meg -Vert. Hold.
† CONCENTRIKIT EQUIVALENT-KIT K-2, BASE ELEMENTS & SHAFTS B11-123 & P8-112 (Panel)
B11-239 & R18-123 (Rear).
†† CONCENTRIKIT EQUIVALENT-KIT K-2, BASE ELEMENTS & SHAFTS B17-109 & P1-126 (Panel)
B13-130 & R1-216 (Rear) & SWITCH 76-1.

RESISTORS

ITEM No.	RATING OHMS	RATING WATT	REPLACEMENT DATA Silvertone PART No.	IRC PART No.	NOTES
R6	1 Meg	½		BTA-470	
R7	750KΩ	½		BTB-2200	
R8	470Ω	½		BTS-10K	
R9	220KΩ	½	BTS-470	BTS-270K	
R10	8200Ω	½	BTS-8200	BTS-2.2Meg	
R11	10KΩ	½	BTS-10K	BTA-47K	Note 1
R12	15KΩ	½		BTS-270K	
R13	6200Ω	½		BTS-560K	
R14	4700Ω	½	BTS-4700	BTS-22K	Note 11
R15	3300Ω	½	BTS-3300	BTS-47K	
R16	1000Ω	½	BTS-1000	BTS-1100-5%	
R17	470Ω	½	BTS-470	BTS-4700	
R18	15KΩ	½		BTS-820	
R19	47Ω	½		BTS-1800	
R20	1000Ω	½	BTS-1000	BTS-22K	
R21	3300Ω	½	BTS-3300	BTS-8200	
R22	150Ω	½	BTS-150	BTS-33K	
R23	18KΩ-5%	½	BTS-18K-5%	1FM-35	
R24	47Ω	½		BTS-470K	
R25	1000Ω	½	BTS-1000	BTS-1.5Meg-5%	
R26	3300Ω	½	BTS-3300	BTS-1.5Meg-5%	
R27	150Ω	½	BTS-150	BTS-1.5Meg-5%	Note 3
R28	1000Ω	½	BTS-1000		
R29	47Ω	½		BTS-100K	
R30	1000Ω	½	BTB-1000	BTS-10 Meg	
R31	22KΩ	½		BTS-12K-5%	Note 4
R32	120Ω	½	BTS-120	BTS-2.2Meg	
R33	1000Ω	½	BTS-1000	BTS-1500	
R34	150Ω	½	BTS-150	BTS-8200	
R35	560KΩ	½	BTS-560K	BTS-100K-5%	
R36	330KΩ	½	BTS-330K	BTS-100K-5%	
R37	560KΩ	½	BTS-560K	BTS-4.7Meg	
R38	330KΩ	½	BTS-330K	BTS-1 Meg	Note 12
R39	100KΩ	½	BTS-100K	BTS-12K	Note 7
R40	3300Ω-5%	½	BTS-3300-5%	BTA-8200	
R41	100Ω	½		BTS-1200	
R42	4700Ω	½		BTS-100K-5%	Note 5
R43	220KΩ	½	BTS-220K	BTB-120K	
R44	1 Meg	½	BTS-1 Meg	BTS-8200	
R45	150Ω	½	BTS-150	BTA-15K	
R46	4700Ω-5%	2	BTB-4700-5%	BTS-470K	
R47	220KΩ	½	BTS-220K		
R48	220KΩ	½	BTS-220K	1 3/4A-50	Note 8
R49	220KΩ	½	BTS-220K	BTB-27K	
R50	680KΩ	½	BTS-680K	BTB-27K	Note 13
R51	100KΩ	½	BTS-100K	BTB-27K	
R52	130KΩ	½		BTB-1800	
R53	150Ω	½	BTS-150		
R54	1000Ω	½	BTS-1000		
R55	680KΩ	½			Note 18
R56	12KΩ	1	BTA-12K		Note 16
R57	22KΩ	1	BTA-22K	BTB-6800	Note 15
R58	3900Ω-5%	½	BTS-390-5%	2D-2250	Note 14
R59	47KΩ	½	BTS-47K	BTB-6800	Note 14
R60	10KΩ-5%	½	BTS-10K-5%	BTB-6800-5%	Note 14
R61	10KΩ-5%	½	BTS-10K-5%	BTB-6800-5%	Note 14
R62	10 Meg	½	BTS-10 Meg	BTA-470	Note 6
R63	180KΩ-5%	1	BTA-180K-5%	BTS-220K	Note 9
R64	100KΩ	½	BTS-100K	Note 17	
R65	1 Meg	½	BTS-1 Meg		

ITEM No.	RATING OHMS	RATING WATT	REPLACEMENT DATA Silvertone PART No.	IRC PART No.	NOTES
R66	470Ω	1		BTA-470	
R67	2200Ω	2		BTB-2200	
R68	10KΩ	½		BTS-10K	
R69	270KΩ	½		BTS-270K	
R70	2.2Meg	½		BTS-2.2Meg	
R71	47KΩ	½		BTA-47K	
R72	270KΩ	½		BTS-270K	
R73	560KΩ	½		BTS-560K	
R74	22KΩ	½		BTS-22K	Note 11
R75	47KΩ	½		BTS-47K	
R76	1100Ω-5%	½		BTS-1100-5%	
R77	4700Ω	½		BTS-4700	
R78	820Ω	½		BTS-820	
R79	1800Ω	½		BTS-1800	
R80A	22KΩ	½		BTS-22K	
B	8200Ω	½	∗N24166	BTS-8200	
C	8200Ω	½		BTS-8200	
R81	22KΩ	½		BTS-22K	
R82	470K Ω	½		BTS-470K	
R83	1.5Meg-5%	½		BTS-1.5Meg-5%	
R84	1.5Meg-5%	½		BTS-1.5Meg-5%	Note 3
R85	100KΩ	½		BTS-100K	
R86	10 Meg	½		BTS-10 Meg	
R87	12KΩ-5%	½		BTS-12K-5%	Note 4
R88	2.2Meg	½		BTS-2.2Meg	
R89	15000Ω	½		BTS-1500	
R90	8200Ω	½		BTS-8200	
R91	100KΩ-5%	½		BTS-100K-5%	
R92	100KΩ-5%	½		BTS-100K-5%	
R93	4.7Meg	½		BTS-4.7Meg	
R94	1 Meg	½		BTS-1 Meg	Note 12
R95	12KΩ	2		BTS-12K	Note 7
R96	8200Ω	½		BTA-8200	
R97	1200Ω	½		BTS-1200	
R98	100KΩ-5%	½		BTS-100K-5%	Note 5
R99	120KΩ	½		BTS-120K	
R100	8200Ω	½		BTS-8200	
R101	15KΩ	½		BTA-15K	
R102	470KΩ	½		BTS-470K	
R103	47Ω	½			
R104	50Ω	5		1 3/4A-50	Note 8
R105	27KΩ	2		BTB-27K	
R106	27KΩ	2		BTB-27K	
R107	27KΩ	2		BTB-27K	
R108	1800Ω	2		BTB-1800	
R109	3.9Ω	1			
R110	470KΩ	½			
R111	200Ω	15			Note 18
R112	200Ω	15			Note 16
R113	6800Ω	½		BTB-6800	Note 15
R114	2200Ω	30		2D-2250	Note 14
R115	6800Ω	2		BTB-6800	Note 14
R116	6800Ω-5%	2		BTB-6800-5%	Note 14
R117	6800Ω-5%	2		BTB-6800-5%	Note 14
R118	470Ω	1		BTA-470	Note 6
R119	220KΩ	½		BTS-220K	Note 9
R120	68Ω	½			

∗ Items R80A, R80B, R80C, C87A, C87B, C87C are combined in one unit.
Note 1. Not used in all Models.
Note 2. Some Models use a 1500Ω resistor in this application.
Note 3. All chassis except 132.024-6 use a 1Meg resistor in this application.
Note 4. All chassis except 132.024-6 use a 10KΩ resistor in this application.
Note 5. All chassis except 132.024-6 use a 82KΩ resistor in this application.
Note 6. All chassis except 132.024-6 use a 4700Ω resistor in this application.
Note 7. Ch. 132.024 use a 15KΩ resistor in this application.
Note 8. Ch. 132.024-1 use a 220Ω (5watt) resistor in this application. All other chassis except 132.024-6 use a 300Ω (7 watt resistor)
Note 9. Used only in Ch. 132.024, 132.024-2 and 132.024-3.
Note 10. Not used in Ch. 132.024-1.
Note 11. Ch. 132.024-1 and 132.024 use a 68KΩ resistor in this application.
Note 12. Ch. 132.024-1 and 132.024 use a 470KΩ resistor in this application.
Note 13. Ch. 132.024-1, 132.024 and 132.024-2 use a 22KΩ resistor in this application.
Note 14. In Ch. 132.024-6, these resistors may be replaced by one 1500Ω (20 watt) resistor. All other chassis use a 2200Ω (20 watt) resistor in this application.
Note 15. All chassis except 132.024-6 use a 15KΩ resistor in this application.
Note 16. Used only in Ch. 132.024-6. May be replaced by one 100Ω (30 watt) resistor.
Note 17. Ch. 132.024, 132.024-1, 132.024-2 and 132.024-3 use a 47KΩ resistor in this application.

TRANSFORMER (POWER)

ITEM No.	RATING PRI.	RATING SEC. 1	RATING SEC. 2	RATING SEC. 3	REPLACEMENT DATA Silvertone PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	TRIAD PART No.
T1	①115VAC ②1.84A	675VCT .240ADC	5VAC ③ 3A	6.3VAC ④1.5A SEC. 4 6.3VAC ⑤ 6.5A	N25433	P-8168① ②	P-3018	TP-356 ②	

① Parallel the two 6.3VAC 5A windings and use as Sec. 4
② Drill new mounting holes.

TRANSFORMER (SWEEP CIRCUITS)

ITEM No.	RATING DC RESISTANCE PRI.	RATING DC RESISTANCE SEC	REPLACEMENT DATA Silvertone PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No	TRIAD PART No	NOTES
T2	190Ω	105Ω	N-32446-1	A-8123 ①	A-4003	TBO-3 ①	A-97∗	Vert. Osc. Trans.
T3	437Ω tap ⑥ 20Ω	36Ω tap ⑥ 3.7Ω, 11.7Ω 31.7Ω SEC. 2 0Ω	N-34980		HVO-9 ②	TFB-13	D-19	Horiz. Output Trans.
T4	1560Ω tap ⑥ 4.2Ω		N-23449	A-8141	A-3039	TSO-12	A-104X	Vert. Output Trans.
T5A	24Ω		N-34807	DY-11 ③		TY-7 ④	Y-19 ④	Horiz. Deflection Coils
B	46Ω							Vert. Deflection Coils
T6	18Ω	1Ω	N-40027				WC-12	Width & AFC Trans.

① Drill one new mounting hole.
② No connection between Terminal #7 and #8.
③ Use original horiz. deflection coil network.

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	RATING IMPEDANCE PRI.	RATING IMPEDANCE SEC.	RATING DC RES. PRI.	RATING DC RES. SEC.	REPLACEMENT DATA Silvertone PART No	STANCOR PART No	MERIT PART No	CHICAGO PART No	TRIAD PART No	NOTES
T7	4.5KΩ	3.4Ω	300Ω	.4Ω	N24776-1	A-3849	A-3019	RO-9 ①	S-5X	

① Drill one new mounting hole.

SPEAKER

ITEM No.	RATINGS SIZE	RATINGS FIELD	RATINGS V. C. IMP.	REPLACEMENT DATA PART No.	JENSEN PART No.	QUAM PART No.	NOTES
SP1	5"	PM	3.4Ω	N25607-1 N25507-1 ①	ST-105 Mod. P5-X	5A07	① 8" Speaker and plug assy. for console Model

FILTER CHOKE

ITEM No.	RATINGS TOTAL DIRECT CURRENT	RATINGS D. C. RESISTANCE	RATINGS INDUCTANCE @ CURRENT 1000 (~)	REPLACEMENT DATA Silvertone PART No.	STANCOR PART No	MERIT PART No	CHICAGO PART No	TRIAD PART No
L1	.130A	137Ω	2.2 Hy.	N-23087-1		C-2974		

COILS (RF-IF)

ITEM No.	USE	DC RES. PRI.	DC RES. SEC.	REPLACEMENT DATA Silvertone PART No.	MERIT PART No.	MILLER PART No	IRC Part No.	NOTES
L2	Ant. Trans.	0Ω CT	0Ω					
L3	Ant. Coil	0Ω						Channel 13
L4	Ant. Coils	0Ω						
L5	Neutralizing Coil	0Ω						
L6	Fil. Choke	0Ω		N22456				
L7	RF Coil	0Ω						Channel 13
L8	RF Coils	0Ω						
L9	Mixer Grid Coil	0Ω						Channel 13
L10	Mixer Grid Coils	0Ω						
L11	Feedback Coil	1.5Ω						
L12	Osc. Plate Coil	0Ω CT						
L13	Osc. Coils	0Ω						
L14	Fil. Choke	0Ω		N22456				
L15	Fil. Choke	.2Ω					CL-1	.56 Microhenry
L16	Conv. Plate	.1Ω						
L17	Ist. Video IF	0Ω		N25410				Includes trap
L18	Fil. Choke	0Ω		N23095				
L19	2nd. Video IF	0Ω		N23411				Includes trap
L20	Fil. Choke	0Ω		N23095				
L21	3rd. Video IF	0Ω		N25412				Includes trap
L23	RF Choke	2Ω		N22500-19	TV-180 ∗			30 Microhenries, wound on 18KΩ resistor
L23	4th. Video IF	0Ω		N25413				
L24	RF Choke	2Ω		N22500-19	TV-180 ∗			30 Microhenries, wound on 18KΩ resistor
L25	Cathode Trap	0Ω	0Ω	N25415		6219		
L26	5th. Video IF	0Ω		N25474				Includes Trap
L27	RF Choke	1.8Ω		N22500-8	TV-180 ≡			20 Microhenries, wound on 12KΩ resistor
L28	Series Peaking Coil	2.4Ω		N25468-6	TV-180	6176		40 Microhenries
L29	Series Peaking Coil	.2Ω		N25916	TV-189	6175		1.7 Microhenries
L30	Shunt Peaking Coil	4.2Ω		N25468-5	TV-181	6177		160 Microhenries
L31	Series Peaking Coil	7Ω		N25468-8	TV-185 †	6181 †		250 Microhenries, wound on 16KΩ resistor
L32	4.5MC Trap	1.6Ω		N25609	TV-151	1470		
L33	Shunt Peaking Coil	6Ω		N25468-1	TV-184	6180		185 Microhenries
L34	Sound IF	1.5Ω		N25543		1470-A		
L35	Ratio Det.	3.6Ω	.3Ω CT	N25322	TV-110	1468		Tertiary Winding - .95Ω
L36	Horiz. Osc.	73Ω		N23449	TV-183	6210		

≡ Parallel with 18KΩ resistor.
† Parallel with 16KΩ resistor.
∗ Parallel with 18KΩ resistor.

SILVERTONE MODELS 2105, A, 2145, A, B, 3105, 3145 (Ch. 132.024, -1, -2, -3, -4, -5, -6, -31)

PARTS LIST AND DESCRIPTIONS (Continued)

FUSES

ITEM No.	TYPE	RATING	REPLACEMENT DATA					
			Silvertone PART No.		LITTELFUSE PART No.		BUSS PART No.	
			FUSE	HOLDER	FUSE	HOLDER	FUSE	HOLDER
M1	3AG P/T	1/4A 250V	N22493		318.250 (3AG-1/4A P/T)		GJV-1/4	

MISCELLANEOUS

ITEM No.	PART NAME	Silvertone PART No.	NOTES
M2A	RF Tuner	N25731-1	
B	RF Tuner	N25548-1	
M3	IF & FM Trap Assembly	N25963	
M4	Switch	N40131-1	Phono-TV
M5	Switch	N25525	Local-Distance
M6	Centering Magnet	N25626	
M7	Ion Trap	N25662-1	
B2	Trimmer Capacitor	N24528	Horiz. Drive Control 40MMF-370MMF
	Back Cover	N25598-1	
	Back Cover	N25598-2	
	Control Door	N25628-1	
	Dust Seal	N25121-2	
	Safety Glass	N25537	
	Knob	N24739-1	Channel Selector
	Knob	N24741-2	Contrast
	Knob	N24740-2	Fine Tuning
	Knob	N24742-1	Off/On Volume
	Knob	N24699-2	Phono-TV
	Knob Tab	N25683	UHF
	Mask	N25596	Plastic

SERVICING IN THE FIELD

TUNER OSCILLATOR ADJUSTMENTS

Touch-up adjustments of the RF Tuner Oscillator Circuit may be accomplished by removal of the channel selector and fine tuning knobs.

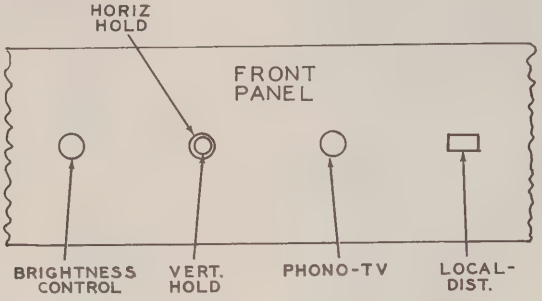
PICTURE TUBE SAFETY GLASS CLEANING

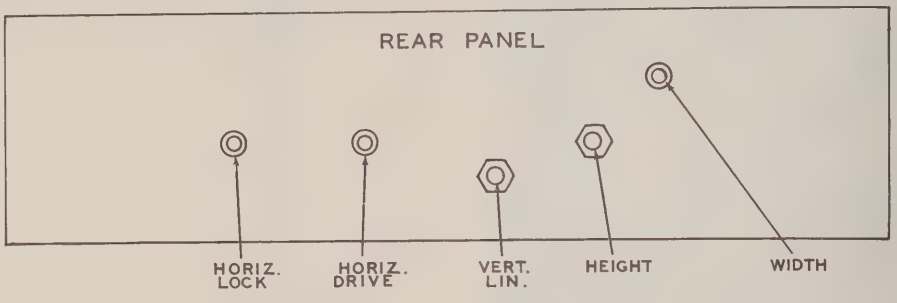
Remove 5 wood screws and metal strip at top of safety glass. Remove safety glass. Use extreme caution when removing safety glass.

PICTURE TUBE REMOVAL

For picture tube removal it is necessary to remove chassis. (See disassembly instructions).

SERVICE ADJUSTMENT LOCATION





HORIZONTAL OSCILLATOR FIELD ADJUSTMENT

Adjustment of the Horiz. lock slug (L36) can be made from rear of chassis. For correct adjustment, see Horiz. Sweep circuit adjustments on page 11.

SOUND IF DETECTOR BUZZ ADJ.

To eliminate Sound IF Detector buzz, adjust the Ratio Detector Secondary (L35) located on top of chassis. (See tube placement chart).

FUSES

One fuse is used for Horiz. Sweep Circuit protection. For location see tube placement chart.

CENTERING

Centering is accomplished mechanically by adjustment of a magnetic ring around the neck of the picture tube. The centering ring should be positioned 1/4" - 1/2" from the yoke. Turn the knurled knob on the centering ring at the same time rotate the centering ring around the tube neck for proper centering.

DISASSEMBLY INSTRUCTIONS

1. Remove 4 push on type control knobs from front panel.
2. Remove 6 wood & 2 metal screws. Remove rear cover.
3. Disconnect built-in antenna, speaker, CRT socket, HV lead. Remove screw & disconnect yoke plug.
4. Remove 6 chassis bolts. Remove chassis.
5. Remove 4 speaker nuts. Remove speaker.

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MODEL 421CM2

STROMBERG-CARLSON
MODEL 421 Series (Revised)

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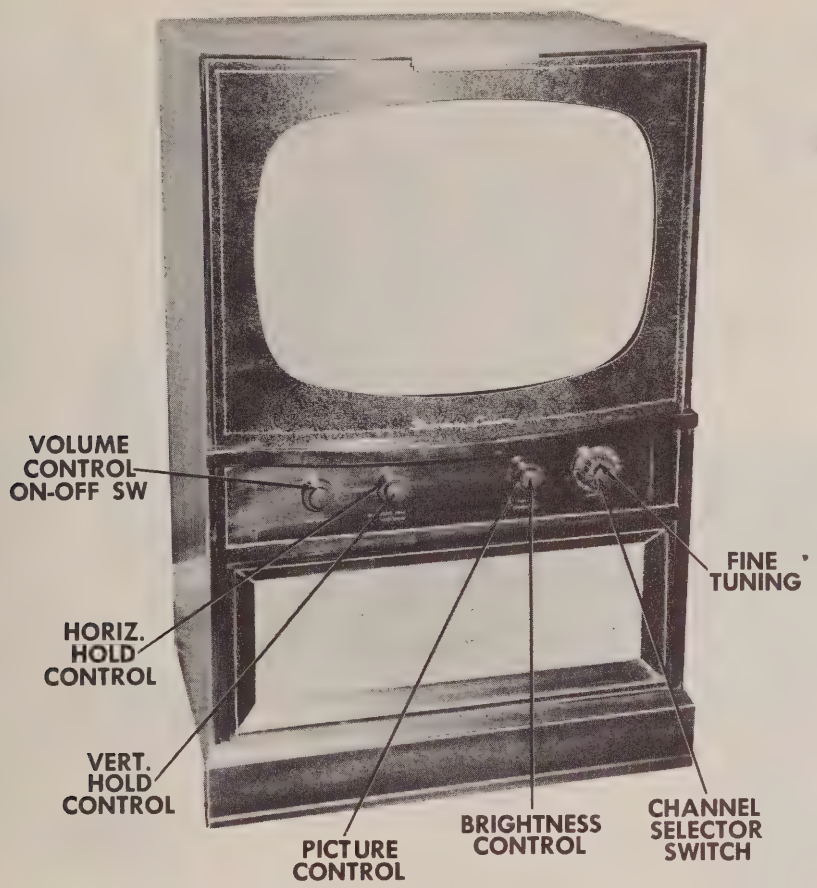

STROMBERG-CARLSON
MODEL 421 Series (Revised)

TRADE NAME	Stromberg-Carlson Model 421CM2 (421 Series, revised)
MANUFACTURER	Stromberg-Carlson Co., 100 Carlson Rd., Rochester 3, N.Y.
TYPE SET	Television Receiver
TUBES	Twenty-four
POWER SUPPLY	110-120 Volts AC-60 Cycle RATING 2.4 Amp. @ 117 Volts AC
TUNING RANGE	Channesl 2 thru 13, Video IF 26.4MC, Sound IF 21.9MC (Intercarrier)

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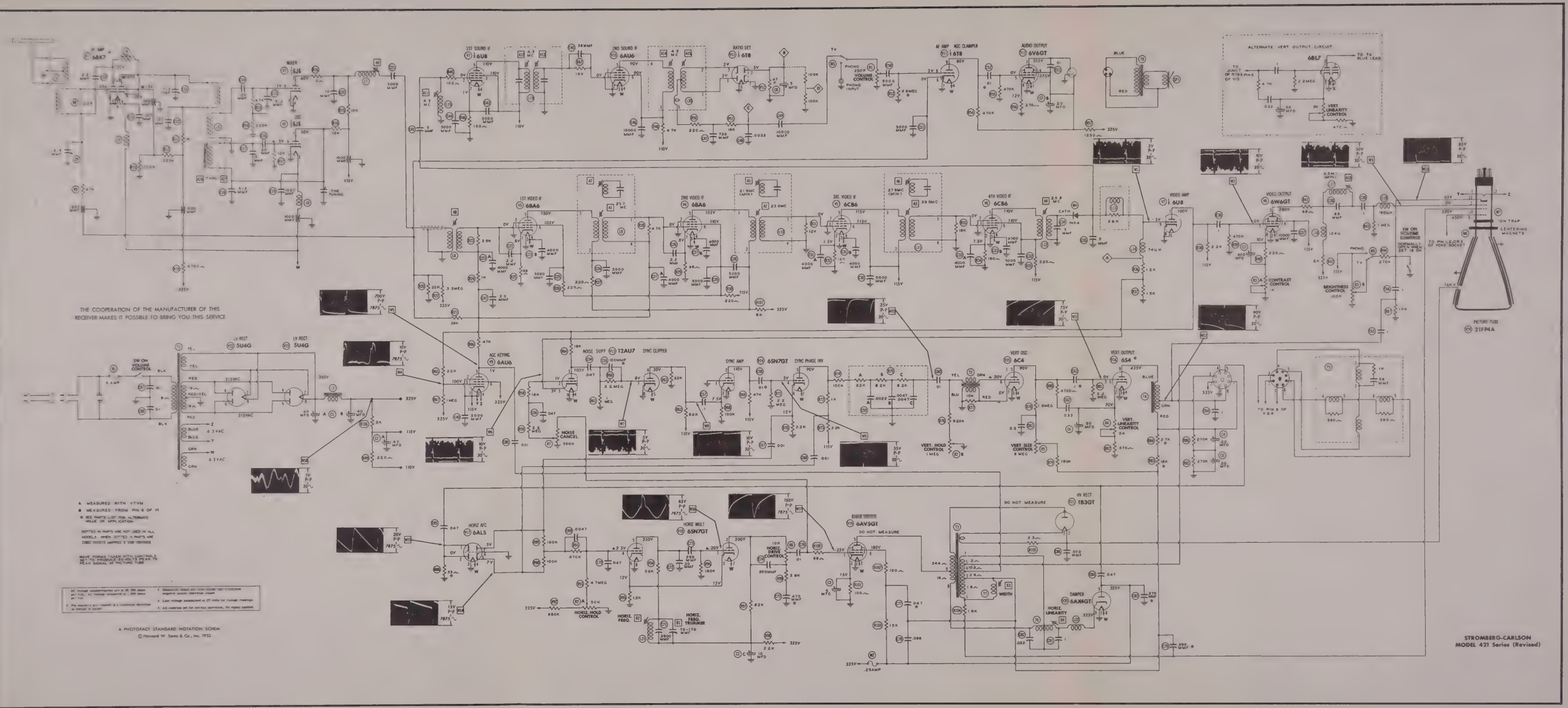
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STROMBERG-CARLSON
MODEL 421 Series (Revised)

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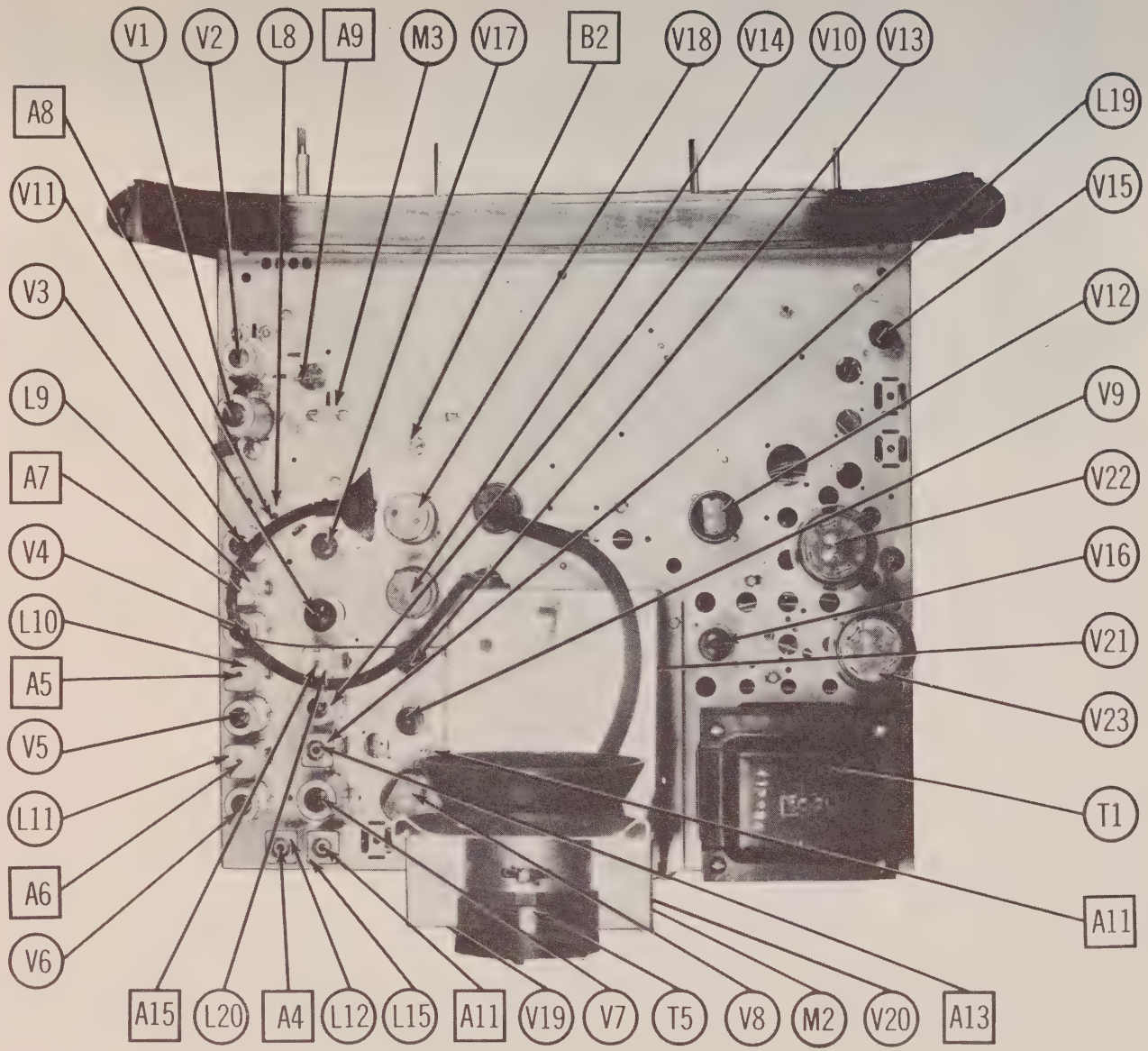
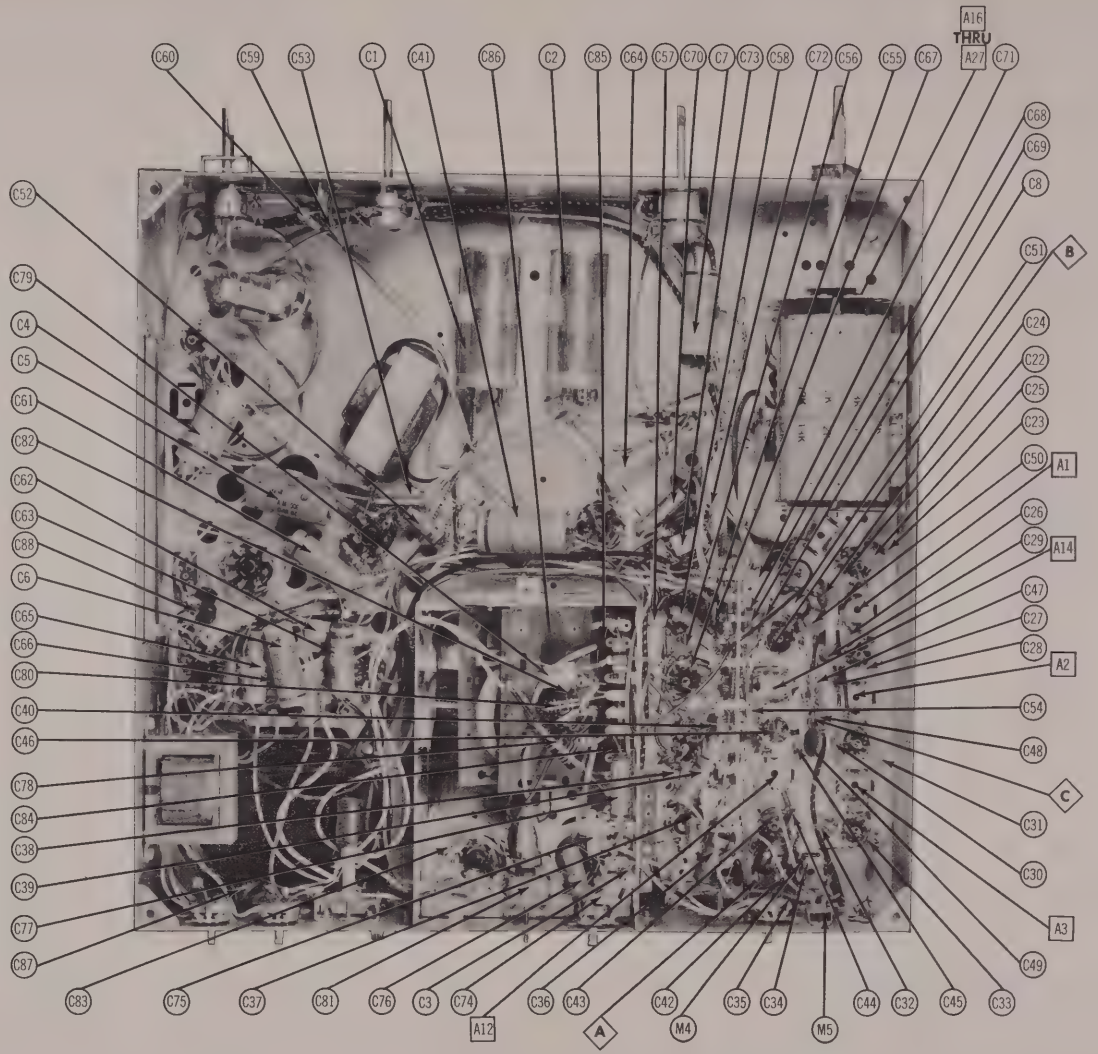


CHASSIS TOP VIEW

MODEL 421 Series (Revised)

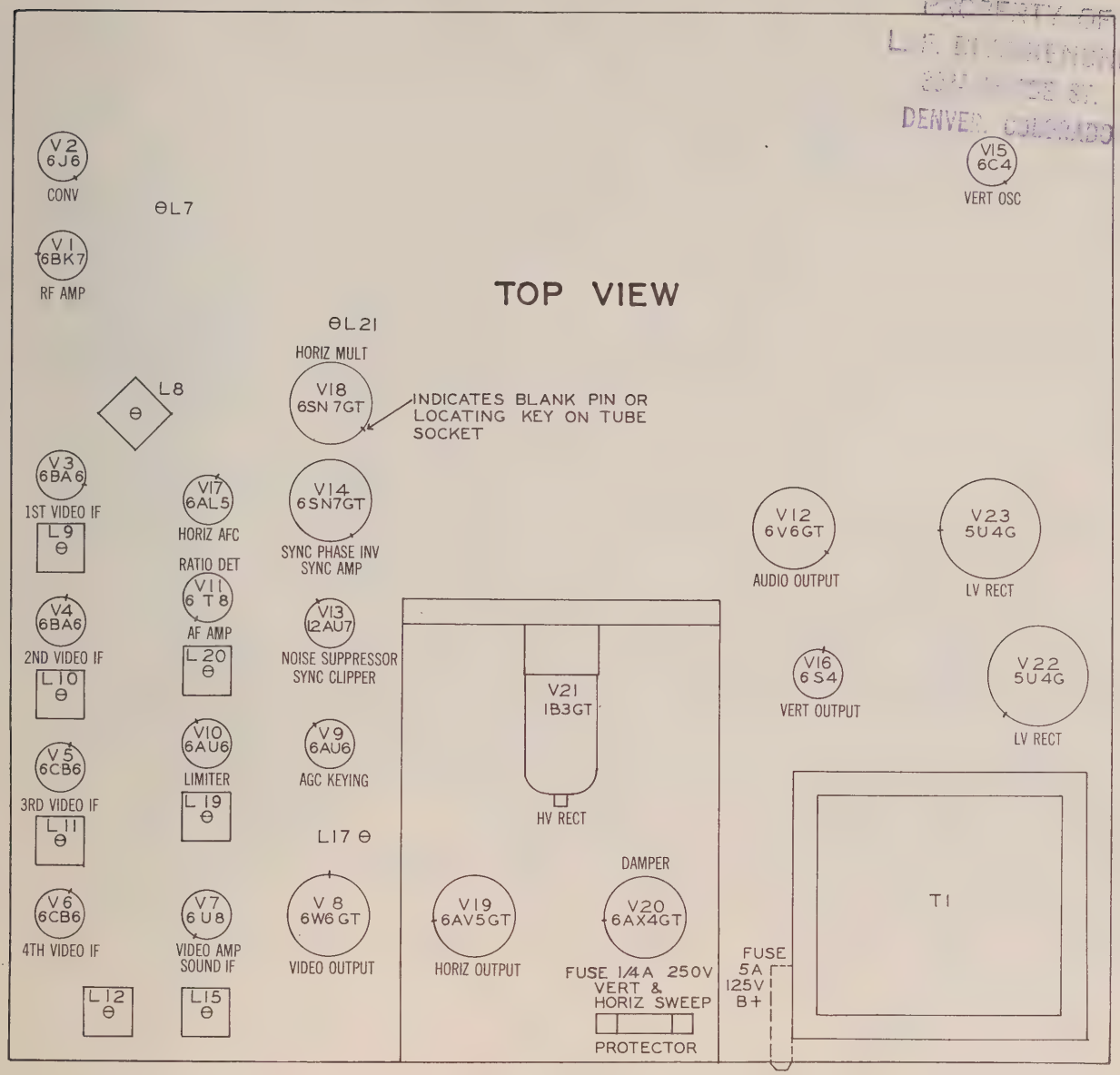
STROMBERG-CARLSON



CHASSIS BOTTOM VIEW-CAPACITOR AND ALIGNMENT IDENTIFICATION

TUBE PLACEMENT CHART

PROPERTY OF
L. F. BLOMENSHIP
DENVER, COLORADO



TUBE FAILURE CHECK CHART

The following chart lists tubes whose failures are most likely to produce the indicated symptoms. Refer to tube placement chart for location and type of tube.

POWER SUPPLY FAILURE
No raster, no sound-V22, V23 Fuse (M1)

LOSS OF PICTURE OR SOUND
No pic, no sound, has raster-V2, V3, V4, V5, V6
No pic, no osound, has snow-V1, V2, V3
No pic, has sound, has raster-V7, V8, V28
Has pic, no sound-V7, V10, V11, V12
Overloaded pciture-V9, V11

SYNC FAILURE
No vert. sync-V14, V15
No horiz. sync-V14, V17, V18
No vert. or horiz. sync-V13, V14

SWEEP FAILURE
No raster, has sound-V18, V19, V20, V21, V24 Fuse (M2)
No vertical deflection-V15, V16
Poor vert. linearity or foldover-V15, V16
Poor horiz. linearity or foldover-V18, V19, V20
Narrow picture-V18, V19, V20, V21, V22, V23
Vert. off freq-V14, V15
Horiz. off freq-V14, V17, V18

ALIGNMENT INSTRUCTIONS

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

The high voltage shock hazard can be eliminated by removing the horizontal multivibrator tube (V18).

VIDEO IF ALIGNMENT

Remove the converter tube (V2) from its socket and replace with a 6J6 which has pin 1 removed.
This will disable the local oscillator and reduce the possibility of erroneous indications.
Connect the negative lead of a 3 volt battery to the ungrounded side of C41. Connect the positive lead to chassis. During Video IF Alignment attenuate the generator output to maintain 2 volts response.
Set noise cancellation control fully counter clockwise.

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
1.	100MMF	High side to pin 1 (grid) of 6BA6 (V3). Low side to chassis.	Not used	23.7MC (Unmod.)	Any	Use VTVM. DC probe to point ◇A◇. Common to chassis.	A1	Adjust for maximum deflection.
2.	"	"	"	23.0MC	"	"	A2	"
3.	"	"	"	26.0MC	"	"	A3	"
4.	"	"	"	25.3MC	"	"	A4	"
5.	"	"	"	21.9MC	"	"	A5	Adjust for MINIMUM deflection.
6.	"	"	"	27.9MC	"	"	A6	"
7.	"	"	24MC	21.9MC	"	Vert. Amp. thru 47KΩ to point ◇A◇. Low side to chassis.	A7	Adjust for dip in response curve as indicated in Fig. 1.
8.	"	"	"	22.7MC 26.4MC	"	"		Check for response curve similar to Fig. 2 with 22.7MC and 26.4MC at 70%. If necessary retouch A1 through A4 for desired response, then check A5, A7 and A6 for any change.
9.	Direct	High side to an ungrounded tube shield floating over dummy converter tube. Low side to chassis	"	"	"	"	A8, A9	Adjust for response curve similar to Fig.3 with markers at 50%.

4.5MC TRAP ALIGNMENT

Set contrast control for maximum contrast.

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
10.	100MMF	High side to point ◇A◇. Low side to chassis.	Not used	4.5MC (400∿Mod.)	Any	Vert. Amp. thru detector (Fig.4) to pin 2 of picture tube. Low side to chassis.	A10	Adjust for MINIMUM 400∿ indication on scope.

SOUND IF ALIGNMENT USING AM SIGNAL GENERATOR AND VTVM

Connect two matched 100KΩ (±1%) resistors in series from point B to chassis. The junction of these two resistors is alignment point D as shown on the schematic.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT VTVM	ADJUST	REMARKS
11.	100MMF	High side to pin 2 (grid) of 6U8 (V7). Low side to chassis.	4.5MC (Unmod.)	Any	DC probe to point ◇B◇. Common to chassis.	A11, A12 A13, A14	Adjust for maximum deflection.
12.	"	"	"	"	DC probe to point ◇C◇. Common to point ◇D◇.	A15	Adjust for zero reading. A positive and negative reading will be obtained on either side of the correct setting.

FIG.1

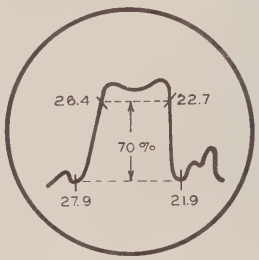


FIG.2

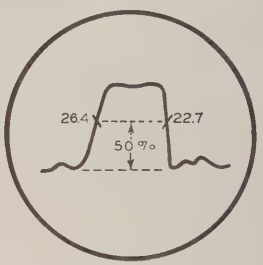


FIG.3

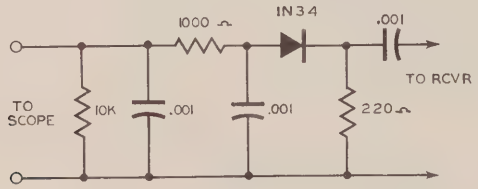


FIG.4

ALIGNMENT INSTRUCTIONS (CONT.)

PROPERTY OF
E. E. [illegible]WKENSHIP
3026 MEADE ST.
DENVER, COLORADO

SOUND IF ALIGNMENT USING FM SIGNAL GENERATOR AND OSCILLOSCOPE

Use frequency modulated signal with 60∿ modulation and 450KC sweep. Use 120∿ sawtooth voltage in scope for horizontal deflection.

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
11.	100MMF	High side to pin 2 (grid) of 6U8 (V7). Low side to chassis.	4.5MC (450KC Swp)	4.5MC	Any	Vert. Amp. to point (B). Low side to chassis.	A11, A12, A13, A14	Disconnect stabilizer capacitor C8. Adjust for curve of maximum amplitude and symmetry as in Fig. 5.
12.	"	"	"	"	"	Vert. Amp. to point (C). Low side chassis.	A15	Reconnect capacitor C8. Adjust so that 4.5MC occurs at center of crossover lines as in Fig. 6. SLIGHTLY retouch A14 for maximum amplitde and straightness of crossover lines.

OSCILLATOR ALIGNMENT

Remove the dummy converter tube and replace the original 6J6 in its socket.
The oscillator adjustment screws are reached through a hole just to the right of the channel switch shaft. The correct adjustment screw is accessible through this hole as the channel switch is turned to each channel.
Connect the synchronized sweep voltage from the signal generator to the horizontal input of the oscilloscope for horizontal deflection.
The sweep generator output lead should be terminated with its characteristic impedance, usually 50 ohms.
Set the fine tuning control to the mid-position of its range.

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
13.	Two 120Ω Carbon Resistors	Across antenna terminals with 120Ω in each lead.	213MC (10MC Swp)	211.25MC 215.75MC	13	Vert. Amp. to point (A). Low side to chassis.	A16	Adjust to place sound marker in trap notch as in Fig. 7. Video marker should be at 50%.
			207MC (10MC Swp)	205.25MC 209.75MC	12		A17	
			201MC (10MC Swp)	199 .25MC 203.75MC	11		A18	
			195MC (10MC Swp)	193.25MC 197.75MC	10		A19	
			189MC (10MC Swp)	187.25MC 191.75MC	9		A20	
			183MC (10MC Swp)	181.25MC 185.75MC	8		A21	
			177MC (10MC Swp)	175.25MC 179.75MC	7		A22	
			85MC (10MC Swp)	83.25MC 87.75MC	6		A23	
			79MC (10MC Swp)	77.25MC 81.75MC	5		A24	
			69MC (10MC Swp)	67.25MC 71.75MC	4		A25	
			63MC (10MC Swp)	61.25MC 65.75MC	3		A26	
			57MC (10MC Swp)	55.25MC 59.75MC	2		A27	

THE RF PORTION OF THIS RECEIVER HAS BEEN PROPERLY ALIGNED AT THE FACTORY AND IS VERY STABLE. ALIGNMENT OF THIS PORTION SHOULD NOT BE REQUIRED IN THE FIELD.

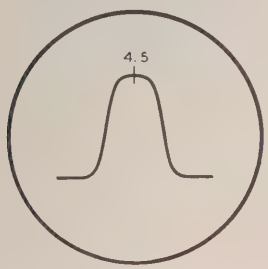


FIG. 5

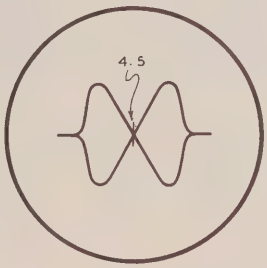


FIG. 6

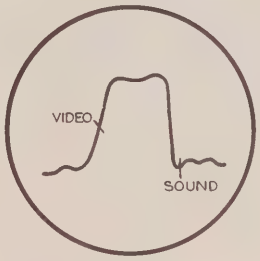
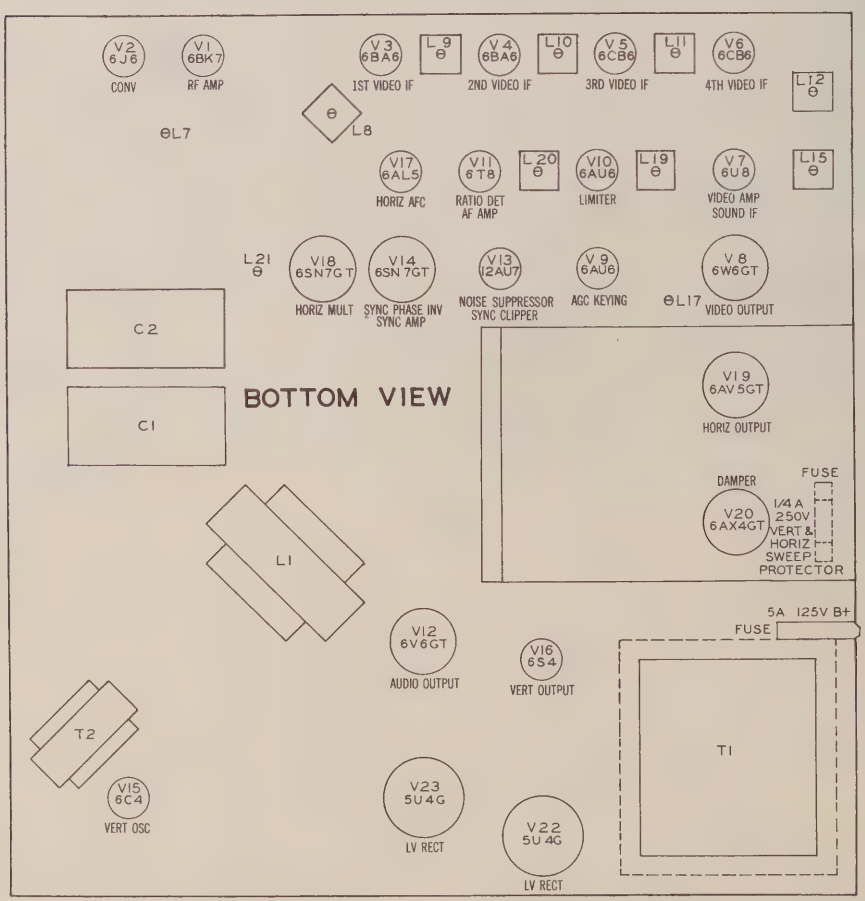


FIG. 7

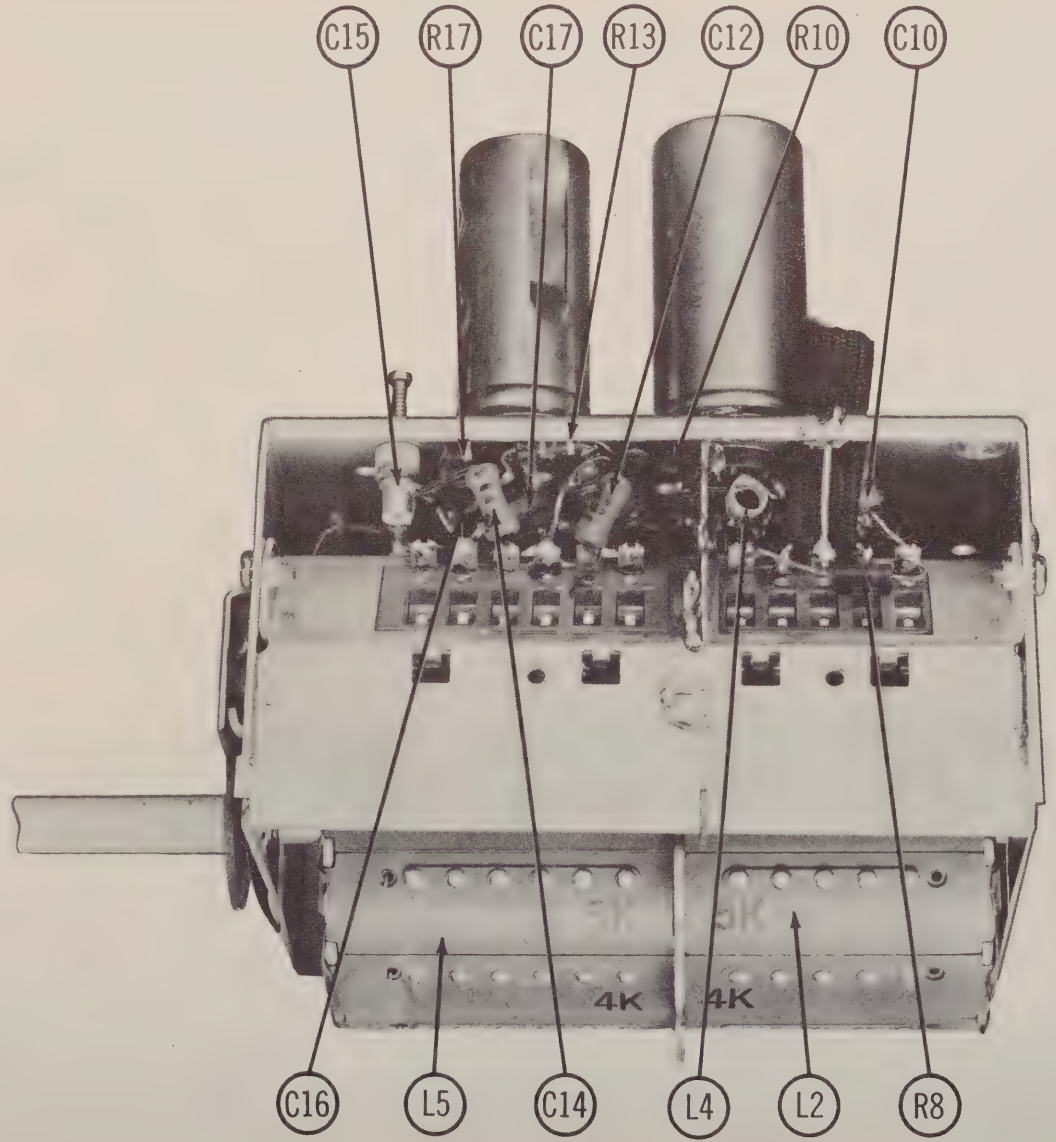
RESISTANCE MEASUREMENTS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V 1	6BK7	INF	70KΩ	0Ω	.1Ω	0Ω	†5.8KΩ	†105KΩ	INF	0Ω
V 2	6J6	†13KΩ	†13KΩ	.1Ω	0Ω	225KΩ	10KΩ	0Ω		
V 3	6BA6	62KΩ	0Ω	0Ω	.1Ω	†8.3KΩ	†3.5KΩ	68Ω		
V 4	6BA6	61KΩ	0Ω	0Ω	.1Ω	† 8.1KΩ	†3.3KΩ	68Ω		
V 5	6CB6	.7Ω	150Ω	0Ω	.1Ω	†3.1KΩ	†3.1KΩ	0Ω		
V 6	6CB6	.7Ω	180Ω	0Ω	.1Ω	†3.3KΩ	†3.3KΩ	0Ω		
V 7	6U8	†5.3KΩ	110Ω	†3.3KΩ	.1Ω	0Ω	†3.3KΩ	150Ω	0Ω	2.7KΩ
V 8	6W6GT	0Ω	0Ω	†2.1KΩ	†3.1KΩ	470KΩ	#1.8KΩ	.1Ω	500Ω	
V 9	6AU6	†27KΩ	†3.1KΩ	■0Ω	■.1Ω	110KΩ	†60Ω	†3.1KΩ		
V 10	6AU6	15KΩ	0Ω	0Ω	.1Ω	†8KΩ	†8KΩ	0Ω		
V 11	6T8	INF	47KΩ	.INF	.1Ω	0Ω	22KΩ	0Ω	6.8Meg	†470KΩ
V 12	6V6GT	0Ω	0Ω	†1.7KΩ	†1.3KΩ	470KΩ	INF	.1Ω	270Ω	
V 13	12AU7	†23KΩ	2.2Meg	1.5KΩ	.1Ω	.1Ω	26KΩ	3.2Meg	0Ω	0Ω
V 14	6SN7GT	0Ω	†50KΩ	150KΩ	2.2Meg	†6.3KΩ	2.2KΩ	.1Ω	0Ω	
V 15	6C4	#5 Meg	INF	0Ω	.1Ω	#5 Meg	1.5Meg	170Ω		
V 16	6S4	INF	1.6KΩ	2.2Meg	.1Ω	0Ω	2.2Meg	INF	INF	#5.7KΩ
V 17	6AL5	33Ω	33Ω	0Ω	.1Ω	5.3Meg	0Ω	5.3Meg		
V 18	6SN7GT	180KΩ	†85KΩ	1.5KΩ	4.7Meg	†8KΩ	1.5KΩ	.1Ω	0Ω	
V 19	6AV5GT	500KΩ	.1Ω	100Ω	INF	#24Ω	INF	0Ω	†15KΩ	
V 20	6AX4GT	INF	INF	200KΩ	INF	†60Ω	†60Ω	0Ω	.1Ω	
V 21	1B3GT	PINS 1 - 8 HAVE INF RESISTANCE								Top Cap #568Ω
V 22	5U4G	INF	40KΩ	†8KΩ	16Ω	INF	16Ω	INF	40KΩ	
V 23	5U4G	INF	40KΩ	INF	16Ω	INF	16Ω	INF	40KΩ	
V 24	21FP4A	■0Ω	1 Meg	Pin 6 #5.5KΩ	Pin 10 #1.8KΩ	Pin 11 300KΩ	Pin 12 ■.1Ω			

† MEASURED FROM PIN 8 OF V22 & V23 .
# MEASURED FROM PIN 3 OF V20.
■ MEASURED FROM 115V LINE .



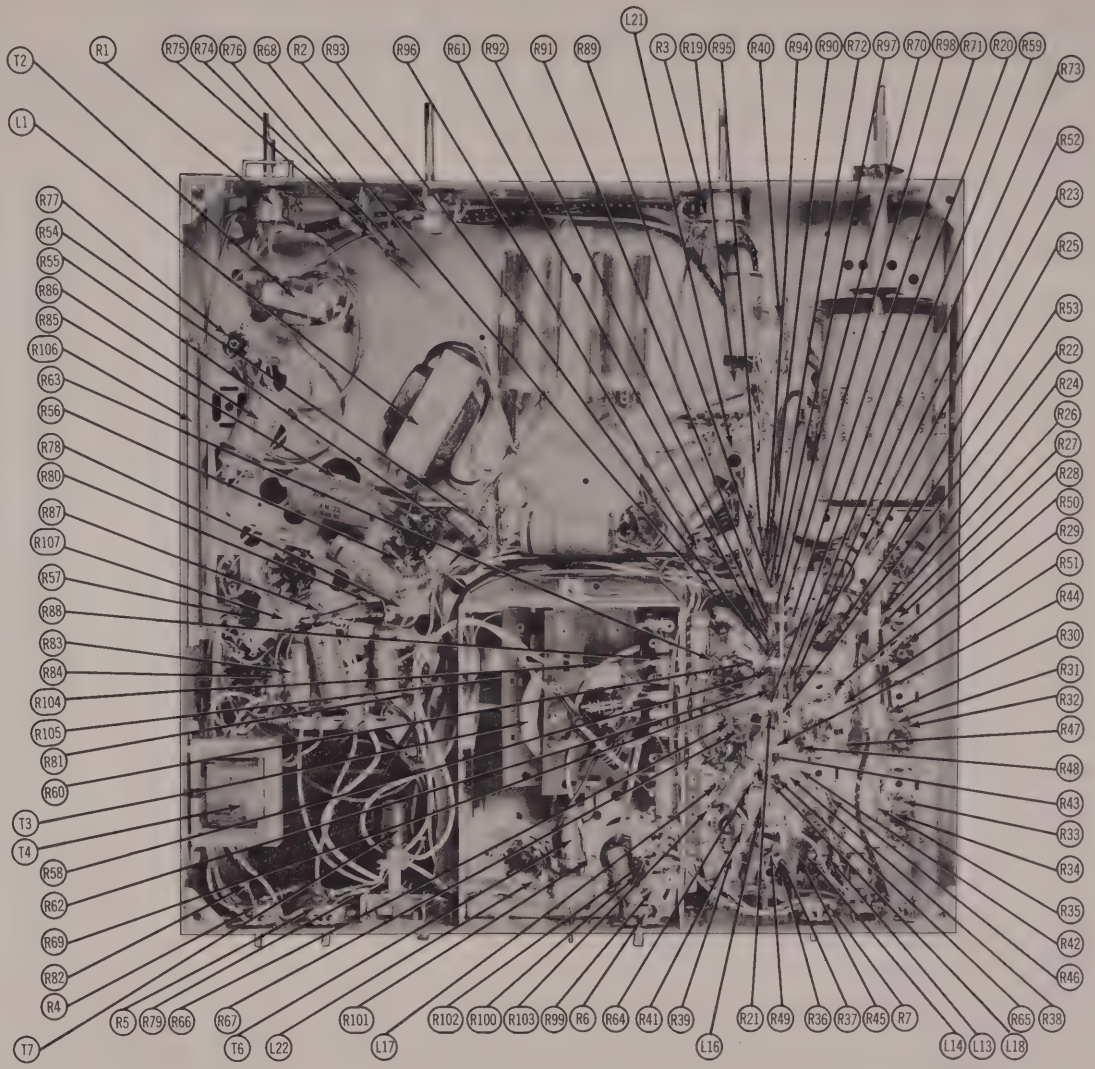
TUBE PLACEMENT CHART



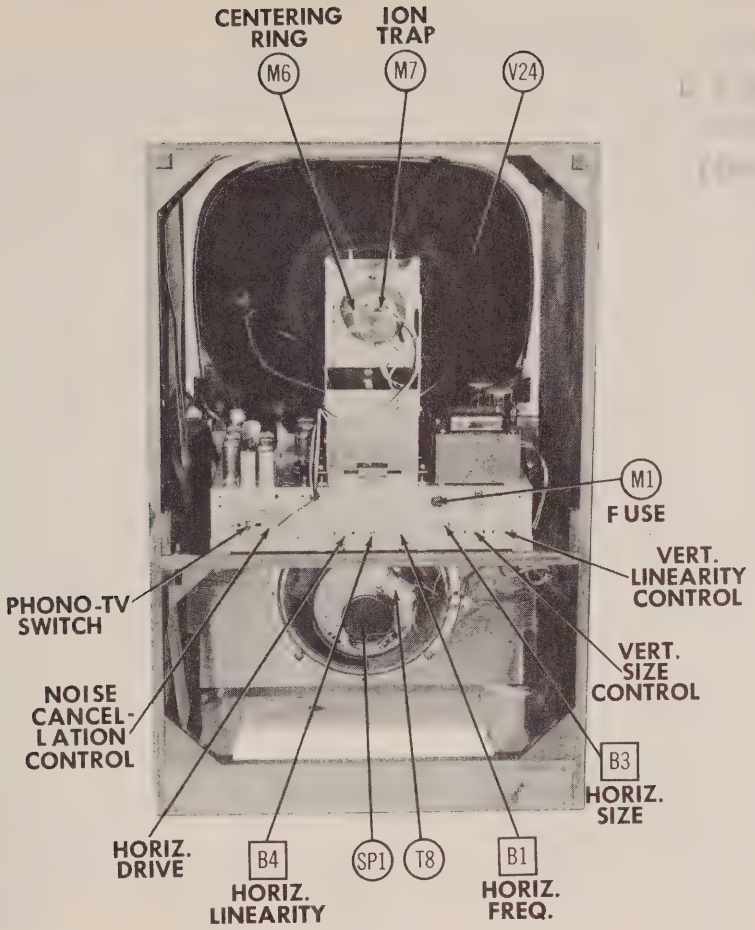
RF TUNER-RIGHT SIDE

PROPERTY OF
L. F. ELLINGHAM
DU

RF TUNER-BOTTOM VIEW



CHASSIS BOTTOM VIEW-RESISTOR AND INDUCTOR IDENTIFICATION



CABINET-REAR VIEW

HORIZONTAL SWEEP CIRCUIT ADJUSTMENTS

Turn the set on and tune in a TV station, preferably a test pattern. Set noise cancellation control fully counter clockwise. Set the horizontal hold control at the mid-position of its range and adjust the horizontal frequency trimmer, (B1) until the picture synchronizes horizontally.

If adjustment of B1 will not synchronize the picture set B1 to the center of its range and adjust the horizontal frequency slug (B2) for synchronization.

Adjust the horizontal drive control for the best compromise between brightness and horizontal linearity.

Adjust the horizontal size slug (B3) for a picture slightly wider than necessary to fill the picture mask horizontally.

Adjust the horizontal linearity slug (B4) for a picture that is symmetrical from left to right.

ADJUSTMENTS FOR ELECTROSTATIC FOCUS

Adjust the ion trap in normal manner where maximum brightness and in-focus picture can be obtained.

Better focus can be obtained if the centering magnet is placed away from the ion trap and close to the deflection yoke, and keeping the two magnets on opposite sides of the picture tube.

Proper connection of the focusing anode is made at the factory. When the picture tube is replaced the anode should be tried at one of three points : ① ground, ② B+, and ③ Boosted B+.

These points are found at pins 1, 2 and 3 respectively, of the yoke plug. The focusing anode lead should be left at the pin which secures best picture focus.

NOISE CANCELLATION CONTROL ADJUSTMENT

All necessary horizontal sweep circuit adjustments should be made before adjustment of noise cancellation control. Tune to strongest available TV signal. Starting with control in extreme counter clockwise position turn control clockwise until picture starts to distort or lose sync, then back off the control until picture is stable and undistorted.

PARTS LIST AND DESCRIPTIONS

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA: Stromberg-Carlson PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RTMA BASE TYPE	NOTES
V1A	RF Amplifier	6BK7	6BK7	9AJ	
B	RF Amplifier	16180	6BQ7	9AJ	
V2	Converter	16118	6J6	7BF	
V3	1st. Video IF Amp.	162012	6BA6	7BK	
V4	2nd. Video IF Amp.	162012	6BA6	7BK	
V5	3rd. Video IF Amp.	162092	6CB6	7CM	
V6	4th. Video IF Amp.	162092	6CB6	7CM	
V7	Video Amplifier 1st Sound IF Amp.	162171	6U8	9-AE	
V8	Video Output	162101	6W6GT	7S	
V9	AGC Keying	162032	6AU6	7BK	
V10	2nd. Sound IF Amp.	162032	6AU6	7BK	
V11	Ratio Det. -AGC Clamp. -A.F Amp.	162077	6T9	9K	
V12	Audio Output	162136	6V6GT	7S	
V13	Noise Suppressor Sync Clipper	162042	12AU7	9A	
V14	Sync Amplifier Sync Phase Inv.	162018	6SN7GT	8BD	
V15	Vert. Oscillator		6C4	6BG	
V16A	Vert. Output	162173	6S4	5AC	
B	Vert. Output	162102	6BL7GT	8BD	
V17	Horiz. AFC	162022	6AL5	6BT	
V18	Horiz. Mult.		6SN7GT	8BD	
V19	Horiz. Output	162100	6AV5GT	6CK	
V20	Damper	162161	6AX4GT	4CG	
V21	HV Rectifier	162029	1B3GT	2C	
V22	LV Rectifier	162107	5U4G	5T	
V23	LV Rectifier		5U4G	5T	

CATHODE-RAY TUBE

ITEM No.	REPLACEMENT DATA: Stromberg-Carlson PART No.	REPLACEMENT DATA: SYLVANIA PART No.	RTMA BASE TYPE	NOTES
V24	21FP4A	21FP4A 21FP4 ①	I2C I3C	① Circuit changes necessary

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: Stromberg-Carlson PART No.	REPLACEMENT DATA: AEROVOX PART No.	REPLACEMENT DATA: CENTRALAB PART No.	REPLACEMENT DATA: CORNELL DUBILIER PART No.	REPLACEMENT DATA: ERIE PART No.	REPLACEMENT DATA: MALLORY PART No	REPLACEMENT DATA: SPRAGUE PART No	NOTES
C1A	≤40	450	111995	AFH2-57		BO45		FP238	TVL-2764	
B	≤40	450								
C2A	≤40	450	111094	AFH4-18		DO17		FP476	TVL-4840	
B	≤20	450								
C	≤10	450								
D	10	450								
C3	5	50	111093	PR8150/4		BR550		TC30	TVA-1303	
C4	20	300	111089	PR8450/20		BR2045A		TC65	TVA-1606	
C5	20	300	111089	PR8450/20		BR2045A		TC65	TVA-1606	
C6	50	50	111012	PR8150/50		BR550		TC30	TVA-1308	
C7	500	12	111082	PR8l2/500		BR5125A		TC1505	TVA-1132	
C8	5	50	111047	PR8150/4		BR550		TC30	TVA-1303	
C9	5-9		171213		829-10					
C10	2.2		110439		TCZ-2.2		NP0K-2R2		5TCCB-V22	
C11	.5-3		171212		829-3			CT56SA		
C12	120		171216	SII20	D6-121	TM5T12	GP2K-121	UC-5312	5GA-T12	
C13	1000		110599	SI1000	D6-102	TM5D1	GP2L-102	UC-521	5HK-D1	
C14	100		110401	SI100	D6-101	TM5T1	GP1K-101	UC-531	5GA-T1	
C15	5-3		171212		829-3			CT56SA		
C16	20		171215	SI20NP0	TCZ-20		NP0K-200	ZT-542	5TCC-Q2	
C17	10		171222	SI10N750	TCN-10		N750K-100	NT-541	5TCU-Q1	
C18	5-3		171213		829-3			CT56SA		
C19	1000		110599	SI1000	D6-102	TM5D1	GP2L-102	UC-521	5HK-D1	
C20	10		171212	SI10NP0	TCZ-10		NP0K-100	ZT-541	5TCC-Q1	
C21	5000		110598	BPD-005	DD-502	TM5D5	811-005	DC-525	5HK-D5	
C22	2.2		110439		TCZ-2.2		NP0K-2R2		5TCCB-V22	
C23A	4000		110685	BPD-2X004	D6-402	TM5DD4	822-004	DCD-524	5HK-2D4	
B	4000				D6-402					
C24	5000		110586	BPD-005	DD-502	TM5D5	811-005	DC-524	5HK-D5	
C25	5000		110586	BPD-005	DD-502	TM5D5	811-005	DC-524	5HK-D5	
C26	2.2		110439		TCZ-2.2		NP0K-2R2		5TCCB-V22	
C27A	4000		110685	BPD-2X004	D6-402	TM5DD4	822-004	DCD-524	5HK-2D4	
B	4000				D6-402					
C28	5000		110586	BPD-005	DD-502	TM5D5	811-005	DC-525	5HK-D5	
C29	5000		110586	BPD-005	DD-502	TM5D5	811-005	DC-525	5HK-D5	
C30	5000		110586	BPD-005	DD-502	TM5D5	811-005	DC-525	5HK-D5	
C31A	4000		110685	BPD-2X004	D6-402	TM5DD4	822-004	DCD-524	5HK-2D4	
B	4000				D6-402					
C32	5000		110586	BPD-006	DD-502	TM5D5	811-005	DC-525	5HK-D5	
C33A	4000		110685	BPD-2X004	D6-402	TM5DD4	822-004	DCD-524	5HK-2D4	
B	4000				D6-402					
C34	5		110598	SI5	TCZ-4.7	5W5V5	GP1K-050	UC-555	5GA-V5	
C35	5		110598	SI5	TCZ+4.7	5W5V5	GP1K-050	UC-555	5GA-V5	
C36	.1	400	110724	P488-1	D6-104	TM5P1		PT401	4TM-P1	
C37	10000		110672	BPD-01	DD-103	TM5B1	821-01	DC-511	5HK-S1	
C38	68		110459	SI68	D6-680	SR5Q7	GP1K-680	UC-5468	5GA-Q68	
C39	.1	400	110724	P488-1	D6-104	TM5P1		PT401	4TM-P1	
C40	5000		110586	BPD-005	DD-502	TM5D5	811-005	DC-525	5HK-D5	
C41	2.0	50	110675							
C42	5		110598	SI5	TCZ-4.7	5W5V5	GP1K-050	UC-555	5GA-V5	
C43	5000		110586	BPD-005	DD-502	TM5D5	811-005	DC-525	5HK-D5	
C44	5000		110586	BPD-005	DD-502	TM5D5	811-005	DC-525	5HK-D5	
C45	38		110488	SI33NP0	TCZ-33		NP0K-330	ZT-5433	5TCC-Q33	
C46	10000		110672	BPD-01	DD-103	TM5B1	821-01	DC-511	5HK-S1	
C47	750	500	110213	1468-00075	D6-751	5W5T75	GP2K-751		1FM-475	
C48	.0033	400	110715	P686-0033	D6-332	PT5ED33	GP2-333-332	PT6233	4TM-D33	
C49	10000		110672	BPD-01	DD-103	TM5B1	821-01	DC-511	5HK-S1	

CAPACITORS (CONT.)

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: Stromberg-Carlson PART No.	REPLACEMENT DATA: AEROVOX PART No.	REPLACEMENT DATA: CENTRALAB PART No.	REPLACEMENT DATA: CORNELL DUBILIER PART No.	REPLACEMENT DATA: ERIE PART No.	REPLACEMENT DATA: MALLORY PART No	REPLACEMENT DATA: SPRAGUE PART No	NOTES
C50	5000		110586	BPD-005	DD-502	TM5D5	811-005	DC-525	5HK-D5	
C51	5000		110586	BPD-005	DD-502	TM5D5	811-005	DC-525	5HK-D5	
C52	.01	600	110737	P588-01	D6-103	PT6EGI	GP2-333-103	PT6U	6TM-S1	Note 5
C53	.01	600	110737	P588-01	D6-103	PT6EGI	GP2-333-103	PT6U	6TM-S1	
C54	.047	400	110722	P488-047	DF-503	PT5E47		PT4147	4TM-S47	
C55	100			SII00	D6-101	TM5T1	GP1K-101	UC-531	5GA-T1	Note 1
C56	.047	400	110722	P488-047	DF-503	PT5E47		PT4147	4TM-S47	
C57	.1	200	110681	P288-1	DF-104	PT2P1		PT201	2TM-P1	
C58	.01	600	110737	P588-01	D6-103	PT6EGI	GP2-333-103	PT6U	6TM-S1	Note 5
C59A	.0022		P588-0022			PT6ED22		PT6222		
B	.001		P588-0047		+PC-100	PT6ED47	+1045	PT6247	+101C1	
C	.0047		P588-0047			PT6ED47		PT6247		
C60	.01	400	110718	P488-01	D6-103	PT4SI	GP2-333-103	PT4U	4TM-S1	
C61	.22	600	110745	684-25		PT6EP22		PT6025	6TM-P22	
C62	.033	600	110740	P688-033		PT6E333		PT6133	6TM-S33	
C63	.1	600	110743	P688-1	DF-104	PT6EP1		PT601	6TM-P1	Note 4
C64	.1	600	110743	P688-1	DF-104	PT6EP1		PT601	6TM-P1	
C65	.1	600	110743	P688-1	DF-104	PT6EP1		PT601	6TM-P1	
C66	.1	400	110724	P488-1	DF-104	PT4EP1		PT401	4TM-P1	
C67	.001	400	110712	P688-001	D6-102	PT5ED1	GP2L-102	PT521	5TM-D1	
C68	.001	400	110712	P688-001	D6-102	PT5ED1	GP2L-102	PT621	6TM-D1	
C69	.0047	400	110716	P688-0047	D6-472	PT5ED47	GP2-333-472	PT6247	6TM-S47	
C70	.047	400	110722	P488-047	DF-503	PT4E47		PT4147	4TM-S47	
C71	.0390		1464-004			IDR5D4		MCB463	MS-24 MS-43	
C72	30	500	110250						MS-43	
C73	390	500	110262	1469-0004		SR5T4		MCB243	MS-34	
C74	390	500	110262	1469-0004		SR5T4		MCB243	MS-34	
C75	470	500	110263	1469-0005		SR5T5		MCB245	MS-35	Note 6
C76	.01	600	110737	P588-01	D6-103	PT6EGI	GP2-333-103	PT6U	6TM-S1	
C77	.047	400	110741	P688-047	DF-503	PT6E47		PT6147	6TM-S47	Note 7
C78	.068	400	110723	P688-068		PT6E468			6TM-S68	Note 6
C79	390	500		1469-0004		SR5T4		MCB243	MS-34	Note 2
C80	.001	1000	110562	P1068-001		PT6E1D1		PT621	MB-D1	
C81	.1	400	110724	P488-1		PT4EP1		PT401	4TM-P1	
C82	.033	400	110721	P488-033		PT4E533		PT4133		
C83	270			SI270	D6-271	SR5T9	GP2K-271	UC-5327	5GA-T27	Note 3
C84	.047	400	110722	P488-047	DF-503	PT4E47		PT4147	4TM-S47	
C85	.047	1000	110572	P1068-047		PT6E1S5		PT6147	MB-S47	
C86	500	20000	110680	HV20C	TV3-502	MM4-C20T5	413-501		20DK-T5	
C87	.01	1000	110568	P1068-01		PT6E1S1		PT611	MB-S1	
C88	.01	1000		P1068-01		PT6E1S1		PT1311	MB-S1	

Note 1. Some Models use 82MMF in this application (Part #110596)
Note 2. Some Models use 330MMF in this application (Part #110454)
Note 3. Some Models use 220MM F in this application (Part #110207)
Note 4. Some Models use .22MFD in this application(Part #110745)
Note 5. Some Models use part #110672 in this application
Note 6. Some Models use .033MFD in this application (Part #110721)
Note 7. Some Models use .22MFD in this application (Part #110726)
Note 8. Some Models use part #110209 in this application
Note 9. This item may be 100MFD (Part #110697) or 40MFD (Part #110056)
* Items C59A, C95B, C59C, R75A, R75B, R75C are combined in one unit.

CONTROLS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: Stromberg-Carlson PART No.	REPLACEMENT DATA: IRC PART No.	REPLACEMENT DATA: CLAROSTAT PART No.	REPLACEMENT DATA: CENTRALAB PART No.	REPLACEMENT DATA: MALLORY PART No.	INSTALLATION NOTES
R1	250KΩ	½	145142					Volume
R2A	50KΩ	½	145146	QJ-420*	RTV-299		UF54L †† UR18L	Horiz. Hold-Panel Vert. Hold-Rear
B	1 Meg	½					WF13 ††	Contrast-Wire Wound- Panel
R3A	1000Ω	2	145140	QJ-289**			UR15L	Brightness-Rear
B	100KΩ	½					SU-14	Vert. Linearity
R4A	500Ω	1	145079	QII-114	AG-19-5	AB-1Ω	Not Req.	Attach to R4A
B	Shaft		Not Req.	Not Req.	FKB-1/4	AK-1	Not Req.	Horiz. Drive
R5A	5 Meg	½	145100		AM-86-8	AB-89	U-82	Vert. size
B	Shaft		Not Req.		FKB-1/4	AK-1	Not Req.	Attach to R5A
R6A	30KΩ	½	145132	QII-116	AG-27-8	AB-14	SU-20	Horiz. Drive
B	Shaft		Not Req.	Not Req.	FKB-1/4	AK-1	Not Req.	Attach to R6A
R7A	500KΩ	½	145147	QII-133	AG-58-8	AB-59	SU-50	Noise Cancellation
B	Shaft		Not Req.	Not Req.	FKB-1/4	AK-1	Not Req.	Attach to R7A

* CONCENTRIKIT EQUIVALENT-KIT K-2, BASE ELEMENTS & SHAFTS B11-123 & P1-112 (Panel)
B11-138 & R2-131 (Rear).
** CONCENTRIKIT EQUIVALENT-KIT K-3, BASE ELEMENTS & SHAFTS W11-108 & P3-111(Panel)
B11-128 & R2-131 (Rear).
† UNIVERSAL REPLACEMENT (MALLORY EXACT DUPLICATE PART NO. UE1005).
†† UNIVERSAL REPLACEMENT (MALLORY EXACT DUPLICATE PART NO. UE28W).

RESISTORS

ITEM No.	RATING: OHMS	RATING: WATT	REPLACEMENT DATA: Stromberg-Carlson PART No.	REPLACEMENT DATA: IRC PART No.	NOTES
R8	22KΩ	½	149109	BTS-22K	
R9	47KΩ	½	149111		
R10	220KΩ	½	149115		
R11	1000Ω	½	149101	BTS-1000	
R12	220KΩ	½	28182	BTS-220K	
R13	4700Ω	½	28166	BTS-4700	
R14	220KΩ	½	28170	BTS-10K	
R15	10KΩ	½	149107	BTS1-10K	
R16	10Ω	½	149089		
R17	10KΩ	½	28170	BTS-10K	
R18	10KΩ	½	28170		
R19	4700Ω	2	149080	BTS-4700	
R20	22KΩ	½	149109	BTS-22K	
R21	39KΩ	½	28176	BTS-39K	
R22	3.3Meg	½	149122	BTS-3.3Meg	
R23	3900Ω	½	28185	BTS-3900	
R24	1000Ω	½	149101	BTS-1000	
R25	68Ω	½	28144		
R26	220Ω	½	149097	BTS-220	
R27	220Ω	½	149097	BTS-220	

RESISTORS (CONT.)

ITEM No.	RATING: OHMS	RATING: WATT	REPLACEMENT DATA: Stromberg-Carlson PART No.	REPLACEMENT DATA: IRC PART No.	NOTES
R28	4700Ω	½	28166	BTS-4700	
R29	68Ω	½	28144		
R30	220Ω	½	149097	BTS-220	
R31	12KΩ	½	28171		
R32	150Ω	½	149096	BTS-150	
R33	18KΩ	½	28173		
R34	180Ω	½	28149	BTS-180	
R35	220Ω	½	149097	BTS-220	
R36	1200Ω	½	28159	BTS-1200	
R37	1500Ω	½	28160	BTS-1500	
R38	2200Ω	½	28162	BTS-2200	
R39	470KΩ	½	149117	BTS-470K	
R40	220Ω	½	149097	BTS-220	
R41	68Ω	½	28144		
R42	20000Ω	7	149411	1 3/4A-2000	
R43	1 Meg	½	149119	BTS-1 Meg	
R44	270KΩ	½	28184		
R45	100Ω	½	149095		
R46	150Ω	½	149096	BTS-150	
R47	15KΩ	½	149108	BTS-15K	

RESISTORS (CONT.)

ITEM No.	RATING: OHMS	RATING: WATT	REPLACEMENT DATA: Stromberg-Carlson PART No.	REPLACEMENT DATA: IRC PART No.	NOTES
R48	4700Ω	½	149142	BTA-4700	
R49	220Ω	½	149097	BTS-220	
R50	220Ω	½	149097	BTS-220	
R51	18KΩ	½	28173	BTS-18K	
R52	47KΩ	½	149111	BTS-47K	
R53	6.8Meg	½		BTS-6.8Meg	Note 1
R54	470KΩ	½	149117	BTS-470K	
R55	470KΩ	½	149117	BTS-470K	
R56	270Ω	1	149170	BTA-270	
R57	1250	5	149420	1 3/4A-1250	
R58	18KΩ	½	28173	BTS-18K	
R59	2.2Meg	½	149121	BTS-2.2Meg	
R60	2.2Meg	½	149121	BTS-2.2Meg	
R61	1 Meg	½	149119	BTS-1 Meg	
R62	82KΩ	½	28180	BTS-82K	
R63	33KΩ	½	149110	BTS-33K	
R64	18KΩ	½	28173	BTS-18K	
R65	22KΩ	½	149109	BTS-22K	
R66	47KΩ	½	149111	BTS-47K	
R67	1 Meg	½	149119	BTS-1 Meg	
R68	150KΩ	½	149114	BTS-150K	
R69	47KΩ	½	149111	BTS-47K	
R70	2200Ω	½	28162	BTS-2200	
R71	2.2Meg	½	149121	BTS-2.2Meg	
R72	1000Ω	½	28158	BTS-1000	
R73	2200Ω	½	28162	BTS-2200	
R74	100KΩ	½	149113	BTS-100K	
R75A	22KΩ	½		BTS-22K	
B	8200Ω	½	+128200	BTS-8200	
C	8200Ω	½		BTS-8200	
R76	820KΩ	½	28190	BTS-820K	

Note 1. Some models use a 10 Meg resistor in this application.
Note 2. Some models use a 2200Ω resistor in this application.
Note 3. Some models use a 270 resistor in this application.
* Items R75A, R75B, R75C, C59A, C59B, C59C are combined in one unit.

TRANSFORMER (POWER)

ITEM No.	RATING: PRI.	RATING: SEC. 1	RATING: SEC. 2	RATING: SEC. 3	REPLACEMENT DATA: Stromberg-Carlson PART No.	STANCOR PART No	MERIT PART No	CHICAGO PART No	TRIAD PART No	RCA PART No
T1	117VAC	630VCT ② 2.4A	5VAC ③ 6A	6.3VAC ④ 6A ⑤ 4A SEC. 4 6.3VAC ⑤ 9.6A	161443	P-8168 ① ②		TP-319	R-50BC 3	

① Parallel the two 6.3V, 5Amp. windings and use for Sec. 4.
② Drill new mounting holes.
③ Parallel the two 5V, 3Amp. windings and use as Sec. 2. Parallel the two 6.3V, 5Amp. windings and use as Sec. 4.

TRANSFORMER (SWEEP CIRCUITS)

ITEM No.	RATING: DC RESISTANCE PRI.	RATING: DC RESISTANCE SEC.	REPLACEMENT DATA: Stromberg-Carlson PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	TRIAD PART No.	RCA PART No	NOTES
T2	170Ω	950Ω	161254	A-8125	A-3003	TSO-2 ①	A-97X	203T2 ①	Vert. Osc. Trans.
T3	560Ω	18Ω Tap@ 160Ω, 8Ω, 5.7Ω	161042			TFB-15	D-19		Horiz. Output Trans.
T4		18Ω SEC. 2 0Ω							
T4	1200Ω Tap@12Ω		161255	A-8123	A-3037	TSO-8	A-102X	222T1	Vert. Output Trans.
T5A	18Ω		114741	MDF-70	DY-9A	TY-3 ③	Y-17	211D2	Horiz. Deflection Coils
B	45Ω		114708 ②						Vert. Deflection Coils
R6	5.6Ω Tap@1.6Ω		114684			TL-3		209R1	Horiz. Lin. Coil
T7	2Ω		114083		MWC-2				Width Coil

① Mount on top of chassis.
② Alternate deflection yoke.
③ Use original deflection network.

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	RATING: IMPEDANCE PRI.	RATING: IMPEDANCE SEC.	RATING: DC RES. PRI.	RATING: DC RES. SEC.	REPLACEMENT DATA: Stromberg-Carlson PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	TRIAD PART No.	NOTES
T8	5.65KΩ	3.4Ω	425Ω	.32Ω	161256 161259 ①	A-3847 ②	A-3930 ②	RO-9 ②	S-5Z ②	① Alternate output trans. ② Drill one new mtg. hole.

SPEAKER

ITEM No.	RATINGS: SIZE	RATINGS: FIELD	RATINGS: V. C. IMP.	REPLACEMENT DATA: Stromberg-Carlson PART No.	VIKING PART No.	QUAM PART No.	NOTES
SP1	12"	PM	3.4Ω	155189	12J11	12A4A	

FILTER CHOKE

ITEM No.	RATINGS: TOTAL DIRECT CURRENT	RATINGS: D. C. RESISTANCE	RATINGS: INDUCTANCE @ CURRENT 1000 (%)	REPLACEMENT DATA: Stromberg-Carlson PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	TRIAD PART No.
L1	.300ADC	60Ω	2.5 Hy.	161030	C-2326 ①	C-2996	TR-3300 ①	C-17X

① Drill one new mounting hole.

RESISTORS (CONT.)

ITEM No.	RATING: OHMS	RATING: WATT	REPLACEMENT DATA: Stromberg-Carlson PART No.	REPLACEMENT DATA: IRC PART No.	NOTES
R77	10KΩ	½	149107	BTS-10K	
R78	1.5Meg	½	28184	BTS-1.5Meg	
R79	180KΩ	½	28183	BTS-180K	
R80	4700Ω	½	28166	BTS-4700	
R81	2.2Meg	½	149121	BTS-2.2Meg	
R82	470Ω	1	149136	BTA-470	
R83	1800Ω	5		BTS-1800	Note 2
R84	2700Ω	5		BTS-2700	Note 2
R85	270KΩ	½	28184	BTS-270K	
R86	270KΩ	½	28184	BTS-470K	
R87	100KΩ	½	149107	BTS-10K	
R88	33Ω	½			Note 3
R89	100KΩ	½	149385	BTS-100K	
R90	100KΩ	½	149385	BTS-100K	
R91	470KΩ	½	149117	BTS-470K	
R92	680KΩ	½	149118	BTS 680K	
R93	4.7Meg	½	149123	BTS-4.7Meg	
R94	5600Ω	1	149184	BTA-5600	
R95	15000-5%	5	149387	BTS-1500-5%	
R96	180KΩ	½	28183	BTS-180K	
R97	82KΩ	½	28180	BTS-82K	
R98	2200Ω	½	28162	BTS-2200	
R99	5600Ω	½	28167	BTS-5600	
R100	68Ω	½	28144		
R101	100Ω	2	149070	BW-2-100	
R102	100Ω	½	149095		
R103	15KΩ	½	33182	1 3/4A-15K	
R104	18000Ω	½	28161	BTS-1800	
R105	3.3Ω	½	149419		
R106	3000Ω	10	149377	ZD-3000	
R107	8000Ω	10	149331	1 3/4A-8000	

STROMBERG-CARLSON
MODEL 421 Series (Revised)

PARTS LIST AND DESCRIPTIONS (Continued)

COILS (RF-IF)

ITEM No.	USE	DC RES.		REPLACEMENT DATA				NOTES
		PRI.	SEC.	Stromberg-Carlson PART No.	MERIT PART No.	MILLER PART No.	IRC Part No.	
L2	Ant. Coils	0Ω CT	0Ω					
L3	Fil. Choke	0Ω		171220				
L4	Neutralizing Coil	0Ω		171219				
L5	RF, Mixer Grid & Osc. Coils	0Ω						
L6	Fil. Choke	0Ω		171220				
L7	Conv. Plate	.3Ω		171221				
L8	1st. Video IF	.1Ω	.4Ω	114119				
L9	2nd. Video IF	.7Ω	.7Ω	114397				Includes Trap
L10	3rd. Video IF	.7Ω	.7Ω	114397				Includes Trap
L11	4th. Video IF	.7Ω	.7Ω	114406				Includes Trap
L12	5th. Video IF	1.2Ω	1.2Ω	114407				
L13	Series Peaking Coil	5Ω		114637				Wound on 5.6KΩ resistor
L14	Shunt Peaking Coil	6Ω		114745	TV-181	6172		74 Microhenries
L15	1st. Sound IF	9.5Ω		114400				
L16	Shunt Peaking Coil	7Ω		114657		4642		124 Microhenries
L17	4.5MC Trap	1.8Ω		114415	TV-151	1470		
L18	Series Peaking Coil	9.5Ω		114640	TV-184	6180		190 Microhenries
L19	2nd. Sound IF	2.4Ω	2.4Ω	114401	TV-113	6203		
L20	Ratio Det.	6Ω	2ΩCT	114375	TV-115	6205		Tertiary Winding ~ .3Ω
L21	Horiz. Osc.	120Ω		114069	TV-163	6210		
L22	RF Choke	1.8Ω		114693			CLA	2.2 Microhenries

FUSES

ITEM No.	TYPE	RATING	REPLACEMENT DATA					
			Stromberg-Carlson PART No.		LITTELFUSE PART No.		BUSS PART No.	
			FUSE	HOLDER	FUSE	HOLDER	FUSE	HOLDER
M1	3AG Slo-Blo	5A 125V	128007		313005 (3AG-5A-Slo-Blo)	342001	MDX-5	HKP
M2	3AG P/T	1/4A 250V	128000		318.250 (3AG-1/4A-P/T)		GJV-1/4	

MISCELLANEOUS

ITEM No.	PART NAME	Stromberg-Carlson PART No.	NOTES
M3	RF Tuner		
M4	Crystal	162157	1N64 (Video Det.)
M5	Switch	158037	TV-Phono
M6	Centering Magnet	114117	
M7	Ion Trap	114645	
M8	Magnets	81825	Anti-pin cushion correction (Used in Early 421 Series)
B1	Trimmer	110043	Horiz. Freq. Control (70-470MMF)

SERVICING IN THE FIELD

TUNER OSCILLATOR ADJUSTMENTS

Touch-up adjustments of the RF Tuner Oscillator circuit may be accomplished by removal of the channel selector and fine tuning knobs. The adjustments are accessible, one at a time, through the small hole in the cabinet to the right of the channel selector shaft.

Remove 2 wood screws holding channel number escutcheon in place.

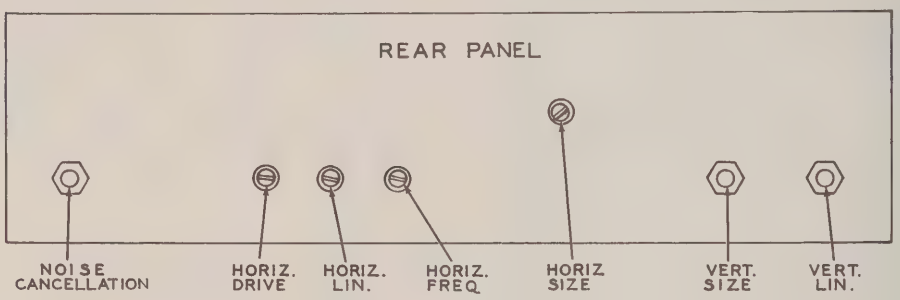
PICTURE TUBE SAFETY GLASS CLEANING

To clean safety glass remove two wood screws holding metal clamp at top center of cabinet. Remove clamp and safety glass. Use extreme caution when removing safety glass.

PICTURE TUBE REMOVAL

For picture tube removal it is necessary to remove chassis. (See disassembly instructions).

SERVICE ADJUSTMENT LOCATION



SPECIAL ADJUSTMENTS - NOISE CANCELLATION CONTROL

Adjustment of the noise cancellation control can be made from rear of chassis. For correct adjustment see Horiz. Sweep circuit adjustment on page 13.

HORIZONTAL OSCILLATOR FIELD ADJUSTMENT

The horizontal frequency trimmer (B1) can be adjusted from rear of chassis.

For the adjustment of the Horiz. Oscillator Slug (L21), it is necessary to remove the rear cover, and supply power to set with a cheater cord. Adjustment is located on top of chassis. (See tube placement chart).

SOUND IF DETECTOR BUZZ ADJ.

To eliminate Sound IF Detector buzz, adjust the Ratio Detector Secondary (L20) located on top of chassis. (See tube placement chart).

FUSES

Two fuses are used. One is used for LV power supply protection and one for Horiz. Sweep Circuit protection. For location see tube placement chart.

CENTERING

Centering is accomplished mechanically by adjustment of two magnetic rings around the picture tube neck. Rotate the magnetic rings around the picture tube neck until proper centering is obtained.

DISASSEMBLY INSTRUCTIONS

1. Remove 7 push on type control knobs from front panel.
   (Note - Loosen 2 set screws on channel selector knob before removing)
2. Disconnect built in antenna and transmission line.
3. Remove 9 wood and 1 metal screw. Remove rear cover.
4. Disconnect speaker. Remove 4 speed nuts. Remove speaker.
5. Remove 5 chassis bolts. Remove chassis.

PROPERTY O
L. F. BLANKENS
[illegible] MAPLE ST.
DENVER, COLORADO

DENVER, COLORADO

TAPE MASTER
MODEL PT-125

Figure 1

GENERAL INFORMATION

The Tape Master Tape Recorder, Model PT-125 is designed to magnetically record on a standard 5" or 7" reel of tape, two tracks instead of one, which doubles the playing time with no loss of frequency response or quality.

This machine records at a constant speed of either 3-3/4" or 7-1/2" per second. Using both channels of the tape, the recording time for the various speeds is as follows:

SIZE	SPEED 3-3/4"	SPEED 7-1/2"
5" reel	1 hour	1/2 hour
7" reel	2 hours	1 hour

For playing back recorded tapes, it is necessary to have an external power amplifier and speaker. The Tape Master SA-13 amplifier and speaker is available for this application, however, any good quality system will give satisfactory results.

The Tape Master Model PT-125 is designed to operate from 105-125 volts, 60 cycle AC. DO NOT CONNECT TO DC POWER SOURCE.

Manufactured by:

Tape Master Incorporated
13 West Hubbard Street
Chicago 10, Illinois

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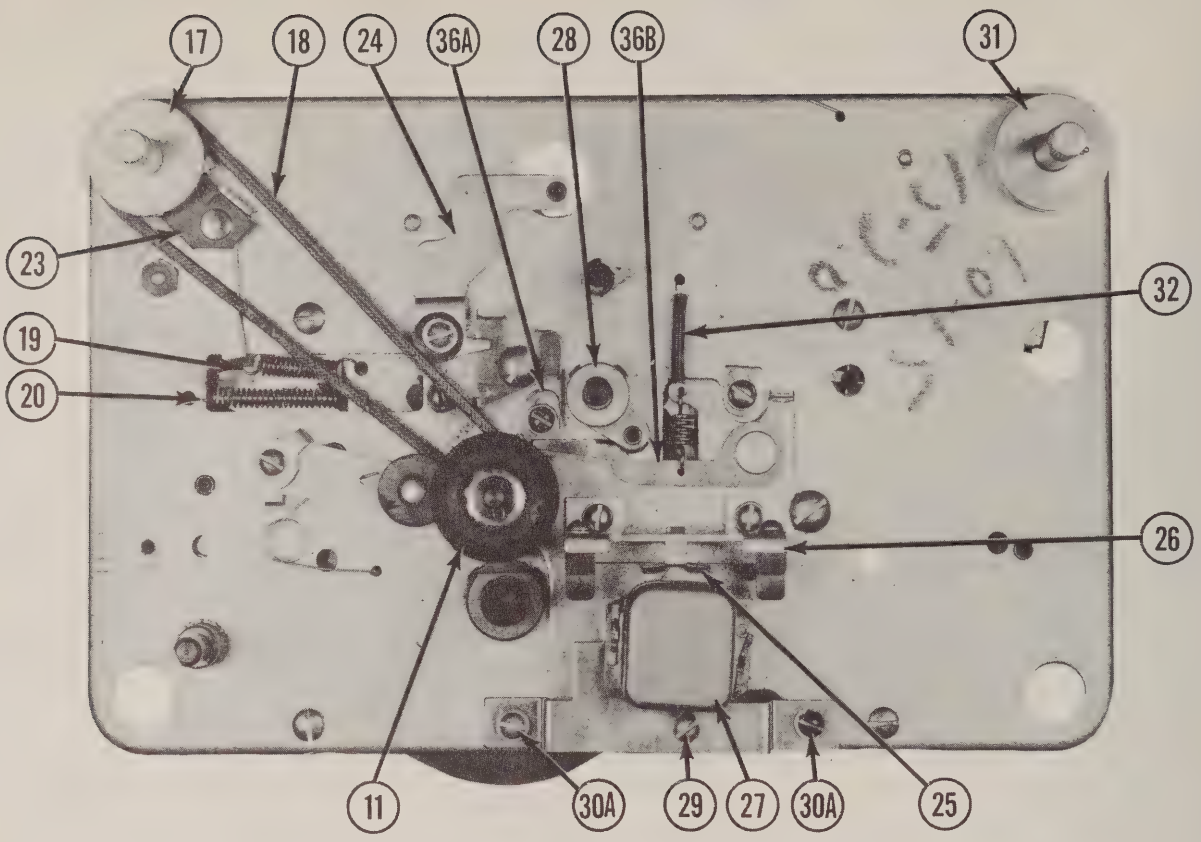


Figure 2

OPERATING INSTRUCTIONS

Preparing the Tape Master for Recording -

1. Connect the output of the PT-125 to an external amplifier and speaker.

2. Insert the line cord into a convenient wall receptacle of the proper rating.

3. Place a reel of tape on the right spindle (31) so that the tape will lead off in a clockwise direction.

NOTE: This recorder uses Type "B" wound tape, i.e. the dull magnetic coated side faces the outside of the reel. If the tape to be used is Type "A" (coated side facing inward), place the reel on the left spindle (17) so that the tape will lead off in a clockwise direction. Bring the tape behind the Speed Change knob (not through the tape slot) directly to the empty reel on the right spindle. Thread the tape through one of the radial slots in the empty reel and rotate the reel several times in a counterclockwise direction to secure the tape. Place control knob (1) in the "Rewind" position and allow the full reel of tape to wind on the empty reel. The dull magnetic side of the tape will now be facing outward.

4. Place an empty reel on the left spindle (17). Be sure that both reels are engaged with the drive pin on the spindles.

5. Pull about one foot of tape from the supply reel and feed it through the tape slot and then through one of the radial slots in the empty reel. Rotate the reel several times in a clockwise direction to secure the tape to the reel.

6. Turn the volume control on the PT-125 all the way on.

7. Turn the external amplifier volume up until a hum is heard in the speaker.

8. Reverse the AC plug connection on both the recorder and external amplifier, one at a time.

9. Determine which plug connection results in a lower hum level and leave each power cord connected for this condition.

INPUT JACKS

Phono-Radio Input -

The Phono-Radio input should be used when recording from a radio, television receiver or phonograph. For use with a low level or reluctance cartridge a suitable pre-amplifier must be used between the cartridge and the "Phono-Radio" input. Crystal cartridges require no pre-amplifier.

Microphone Input -

The "Mic." input is high impediance and should be used with either a crystal or high impediance dynamic microphone.

Phono-Radio Tape Slide Switch -

For playing a radio or phonograph records, the slide switch on the front panel must be in the "Phono-Radio"

position. To play back tape, the slide switch must be in the "Tape" position. The purpose of the slide switch is to allow "straight thru" operation for radio and phonograph input. When this switch is in the "Phono-Radio" position the input is connected directly to the output cable. This makes possible playing music without having to disconnect the tape amplifier. While any such music is being played, it can be recorded on the tape by turning on the tape recorder power and setting the recording level.

To Record From Microphone -

1. Turn the "Play-Record" knob to "Record" position.

2. Insert the microphone plug into the "Mic." input jack.

NOTE: When a microphone is plugged into the "Mic." jack, the "Phono-Radio" input is automatically disconnected. To use the "Phono-Radio" input, the microphone plug must be removed from the "Mic." jack.

3. Turn the "Volume" control clockwise until the incoming signal is sufficient to cause the neon level lamp to flash on high peaks.

NOTE: Correct recording volume is very important. Too weak a signal, which does not cause the level lamp to flash, will result in weak playback and high background noise. Too strong a signal, causing the lamp to glow constantly, will result in distortion during playback. A pair of crystal or high impediance headphones can be connected into the "Monitor" jack to assist in setting a proper recording level. When the volume is right for recording, the signal in the headphones will be loud, but clear and undistorted.

4. Turn control knob (1) to "Forward" position. This engages the drive mechanism and any sound now entering the microphone will be recorded on the tape.

NOTE: Make sure the fast forward control knob (13) is in the "Normal" position, if not the mechanism will not operate.

5. While recording, the master control slide switch can be either in the "Phono-Radio" position for simultaneously playing the program through the external amplifier-speaker, or the slide switch can be in the "Tape" position which will silence the external amplifier-speaker.

To Record From Radio or TV -

1. Recordings can be made from a radio or television receiver by placing the microphone near the speaker; however, this type of recording may not be satisfactory as other sounds may be picked up by the microphone which as a result will be recorded on the tape. A better quality recording can be made by using a special cable with a cable plug on one end and two spring clips on the other end, connected as follows:

2. Insert the cable plug into the "Phono-Radio" input jack.

3. Connect one of the spring clips to each voice coil terminal on the radio or television speaker.

4. Tune in the radio program as usual but use only enough volume to hear the program clearly. Set the recorder volume control so that the Level Lamp flickers on high peaks and proceed with the recording as described in "To Record From Microphone".

5. Reverse the clips at the voice coil terminals if a test recording is not clear and relatively free of hum.

To Record From Phonograph -

1. Connect the spring clips to the ends of the pickup leads of the phonograph; then insert the cable plug into the "Phono-Radio" input jack.

2. To make a recording from a radio-phonograph combination, connect the spring clips across the voice coil terminals on the speaker, turn the radio on and then turn the radio-phono selector to "Phono" position. Use only enough radio volume to hear the record clearly, then adjust the Tape Master controls as described in "To Record From Microphone".

To Stop the Recorder -

1. The recorder may be stopped at any time by turning control knob (1) to "Off". This stops all tape movement.

NOTE: When the mechanism is not in use, control knob (1) should be left in the "Off" position.

Dual Track Operation -

NOTE: Recordings are made on approximately half the width of the tape at one time. Since it is impossible to edit and splice one "track" without affecting the other, recordings which are to be edited should be limited to one track only.

1. After a reel of tape has been recorded, a second track may be recorded on the same reel (without rewinding) by removing the reel from the recorder, turning it over, then placing the full reel on spindle (31) and the empty reel on spindle (17).

2. Thread the tape and proceed with the recording as previously described.

3. After the second track has been recorded, the first track is ready to be played without rewinding, by changing reels as described in Step No. 1, above.

To Rewind -

To rewind the tape, turn control knob (1) to "Rewind" position.

Rewind time for a full reel of tape (7" reel) is less than two minutes. No re-threading is required.

To Play a Recording -

1. Place slide switch in "Tape" position.

2. Place "Play-Record" switch in "Play" position.

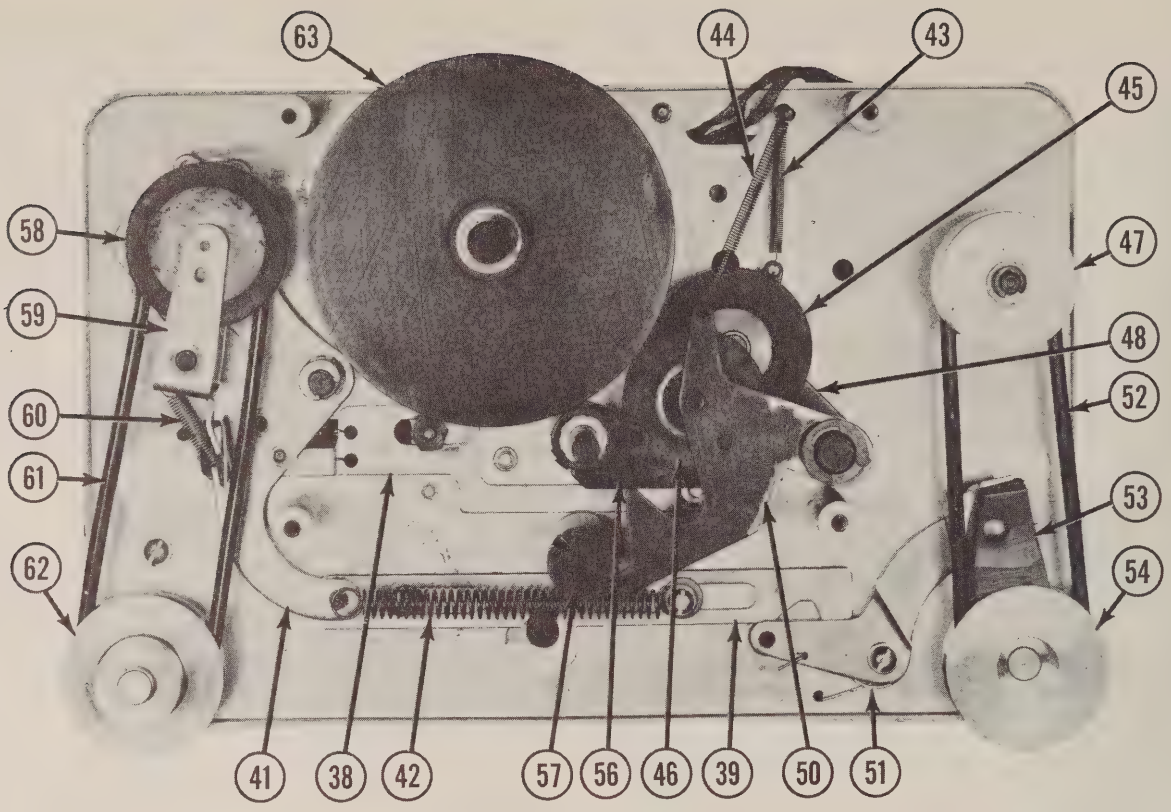


Figure 3

CAUTION: If recorded tape is on the recorder and the "Play-Record" switch is in "Record" position, the program will be erased when the mechanism is put in "Forward" position.

3. Turn control knob (1) to "Forward" position.

4. Adjust "Volume" control for desired listening level.

Fast Forward -

Any portion of a recording may be skipped, or any recording on a tape may be located in a few seconds by pivoting the fast forward control knob (13) in a clockwise direction. A few seconds of "Fast Forward" is equivalent to several minutes of playing time. The fast forward knob (13) has three positions:

(a) Normal, at which position it must remain at all times, except for "Fast Forward".

(b) Pause, is the mid-position that brakes the fast moving reels and stops all tape movement.

(c) Skip is the "Fast Forward" position.

ADJUSTMENTS

Head Pressure -

The head pressure is adjusted by means of two screws (30A) in the slotted holes in the head bracket (30). See Figure 2 and exploded view. To make the adjustment, place control knob (1) in "Forward" position. Loosen screws (30A), then adjust the head into the tape guide assembly (26) until pressure pads (25) show a movement of approximately 1/32" on the back side of tape guide assembly (26).

Head Alignment -

NOTE: Before attempting to align record head (27) make certain that the difficulty is not due to an accumulation of tape coating residue on the pole surface.

1. If a constant frequency tape is not available, play back a good recording and align the head as follows:

The record head (27) is securely mounted on the head alignment bracket (30). The front of the alignment bracket is provided with a rocker action and is associated with adjustment screw (29). Rotating this screw changes the gap alignment with respect to the tape. Proper alignment is achieved when the maximum signal, at a given setting of the "Volume" control is reproduced from the tape, as alignment screw (29) is turned in or out.

Pressure Roller Lever and Arm Adjusting Plate -

Set pressure roller lever (28) so that it is perpendicular to the pressure arm (36B) when control knob (1) is in "Forward" position. Also adjust arm adjusting plate (36A) so it will clear pressure arm (36B) by 1/64" when in this position.

Rewind Transfer Cam (73) -(See Figure 4)-

Rewind transfer cam (73) should be adjusted with control knob (1) in the "Off" position. Loosen the transfer cam set screws and position the cam in such a manner that its stud is centered in slot (A) of the lower mechanism plate (69).

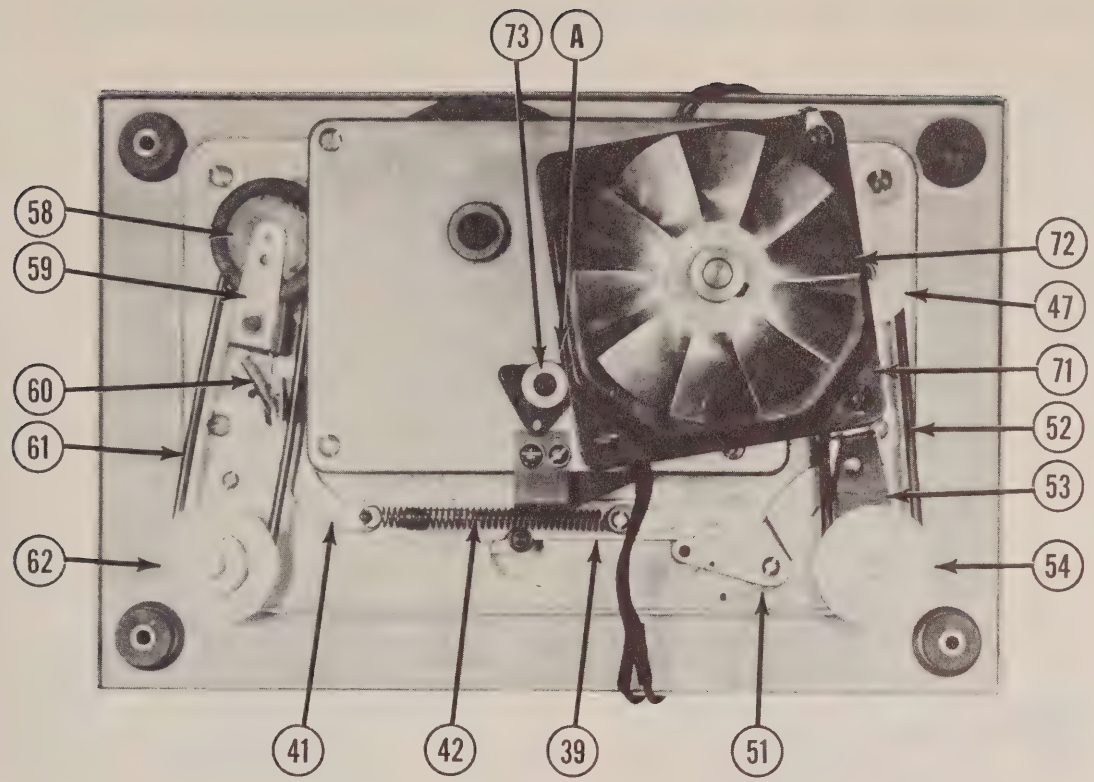


Figure 4

3-3/4" Drive Wheel Transfer Cam (55) -

The roller of the transfer cam (55) should be adjusted so that it will engage the detent slide (38) at point "X", as shown on the exploded view, when control (1) is in the "Off" position.

7-1/2" Drive Wheel Transfer Cam (56) -

The 7-1/2" idler wheel transfer cam (56) should be adjusted with control knob (1) in the "Off" position and speed change knob (8) in the 7.50 position. Loosen the set screws and move transfer cam (56) until 7-1/2" drive wheel (46) is positioned midway between flywheel (63) and motor drive roller (64), then tighten the set screws:

TROUBLES

Irregular Speed "Wow" -

1. Felt pressure pads (25) worn.

(a) Replace with new pads.

2. Oil or grease on motor drive roller (64), 7-1/2" per second drive wheel (46), 3-3/4" per second drive wheel (45), flywheel (63), or pressure roller (11).

(a) Clean with alcohol.

3. Pressure roller (11) eccentric. Allow mechanism to run for twenty minutes. If after this time the roller is still eccentric, replace with new roller.

4. Motor shaft binding. Motor shaft should turn freely when control knob (1) is in "Off" position. If necessary, realign bearings by tapping motor lightly with a wooden mallet.

Motor Runs but Mechanism Will Not Operate -

1. Motor drive roller (64) loose on motor shaft.

2. Fast forward control (13) in "Pause" position.

(a) Turn control to "Normal".

3. Take-up drive belt (18) defective.

(a) Replace belt.

Mechanism Runs Forward But Will Not Rewind -

1. Rewind drive belt (52) stretched or broken.

(a) Replace with new belt.

2. Rewind pulley transfer cam (73) not adjusted properly.

(a) See adjustment on "Rewind Transfer Cam".

Mechanism Fails to Run in Fast Forward -

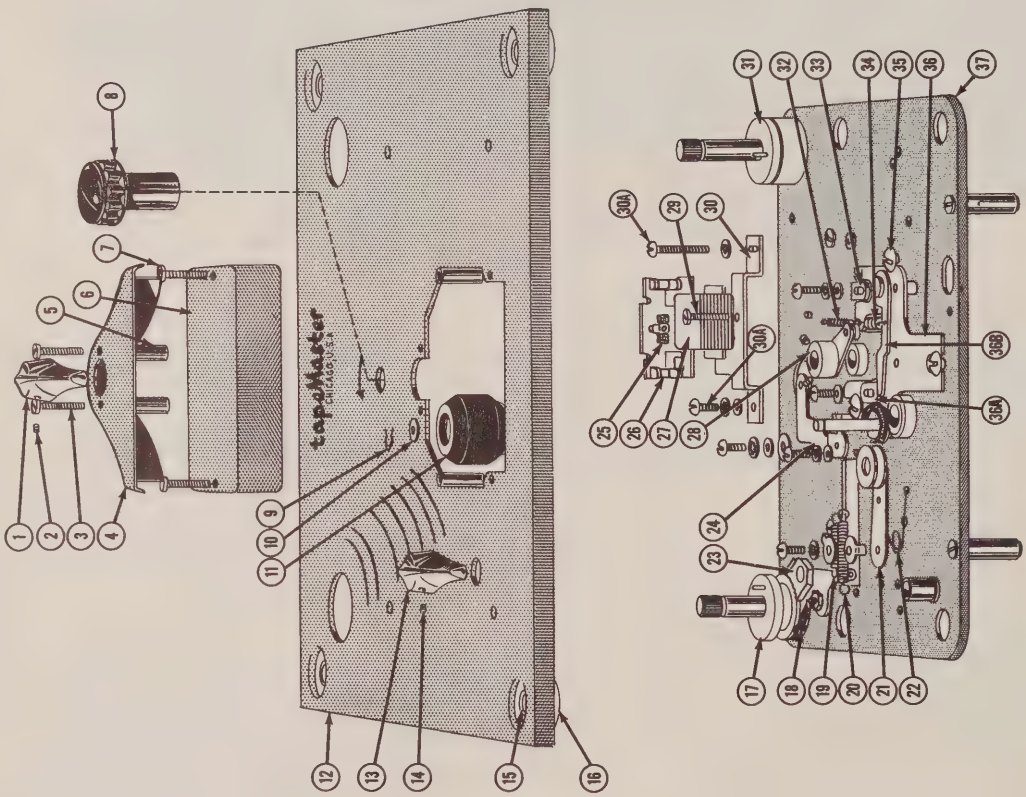
1. Check fast forward drive belt (61) to see if it is properly connected.

2. Control knob (1) not in "Forward" position.

Slow Speed -

1. Low operating temperature.

2. Check for oil or grease on driving surfaces.


tapeMaster
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16
17 18 19 20 21 22 23 24 25 26 27 28 29 30 30A 31 32 33 34 35 36 36A 36B 37

A PHOTOFACT "EXPLODED" VIEW
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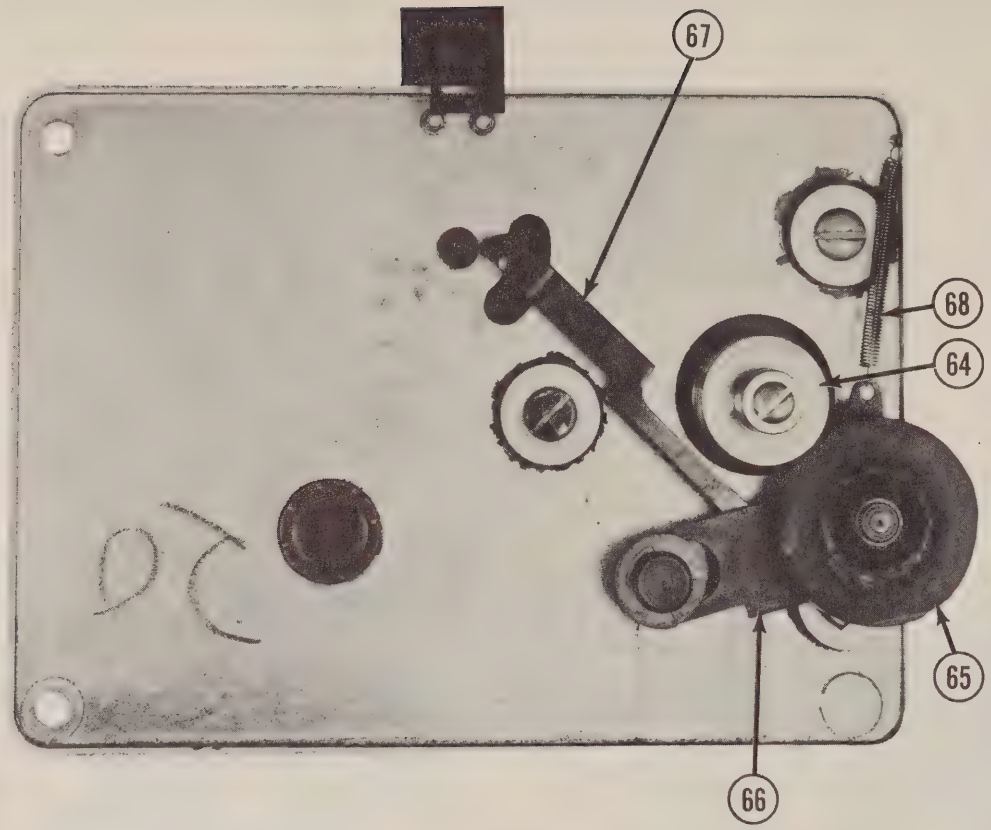


Figure 5

LUBRICATION

All moving parts of this recorder are in either sealed ball bearings, or self-lubricated oilite bearings, therefore, no lubrication is required. Any excess oil seeps to the outer edges of moving parts causing slippage in the drive mechanism. Should this occur, wipe off all parts thus affected, with a clean, soft cloth.

CLEANING

The recording head (27), tape guide assembly (26), pressure roller (11) and capstan are subject to an accumulation of tape coating residue, which is worn off the tape as it passes these parts. To remove this accumulation, proceed as follows:

Remove two screws that hold the front plate (6) in place. Keep control knob (1) in "Off" position. Use a soft cloth and carbon tetrachloride to clean the recording head pole surfaces and the felt pressure pads (25).

Next, turn on the power and set control knob (1) in "Forward" position, With a soft cloth and carbon tetrachloride, wipe off all foreign matter from the capstan and pressure roller, while they are revolving.

NEON LAMP CALIBRATION

When tubes are replaced, it may be necessary to reset the neon lamp calibration. The control shaft for this adjustment is located on the rear of the pre-amplifier chassis. If recordings are made and the neon lamp flashes only on volume peaks, and on playback, the volume level is either too low, or quite high and distorted, it indicates either defective parts, or improper setting of the neon lamp control. To reset the neon lamp control, proceed as follows:

Provide music input from radio or phonograph. With the switch in record position, connect crystal or high impediance magnetic headphones into the monitor jack and set the volume control so that the music is loud, but not distorted. If the lamp is now lit all the time, or does not flash at all, it needs adjusting. Reset the control shaft on the rear of the pre-amplifier chassis until the lamp flashes only on volume peaks. Recordings made at this setting will be neither low volume or distorted.

MECHANICAL PARTS LIST

Ref. No.	Description
1	Mechanism Control Knob
2	Set Screw for Control Knob
3	Rear Plate Mounting Screw
4	Rear Plate
5	Plate Spacer
6	Front Plate
7	Front Plate Mounting Screw
8	Speed Change Knob
9	Hairpin Clip
10	Flat Washer

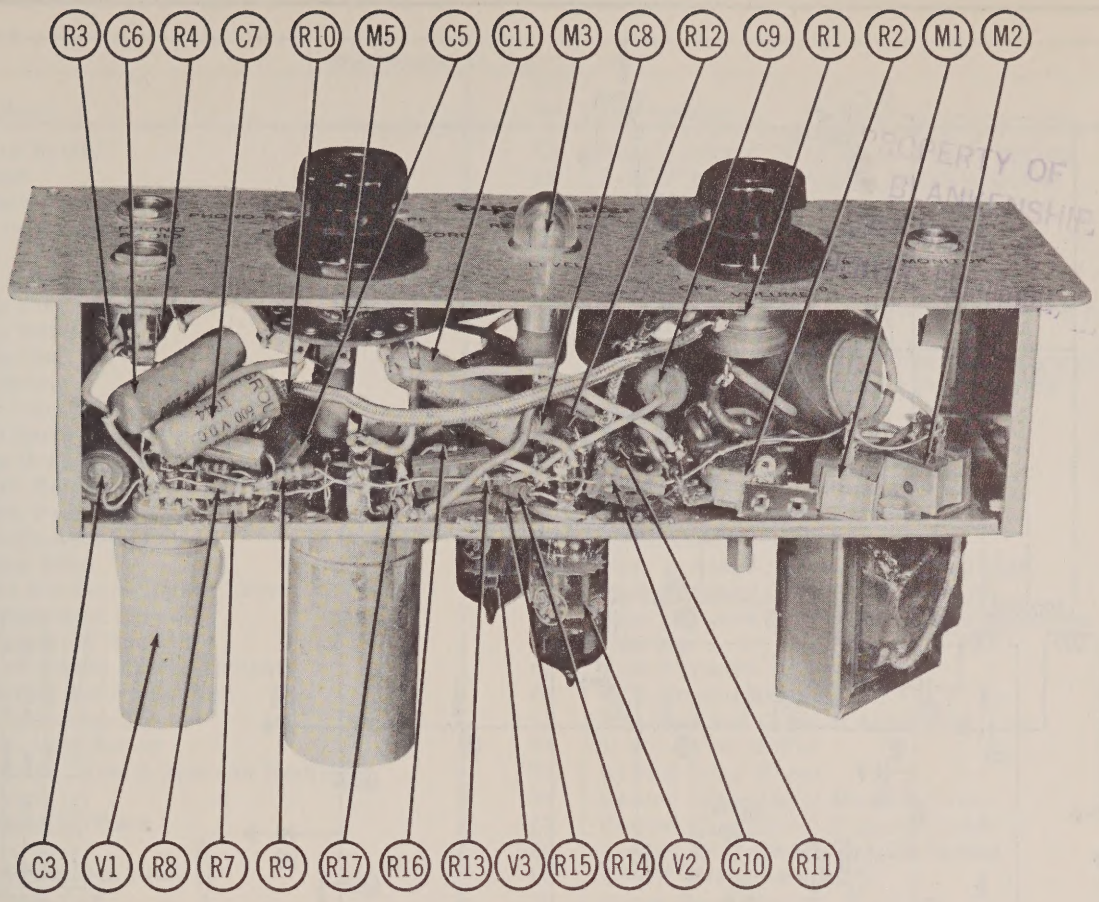


Figure 6

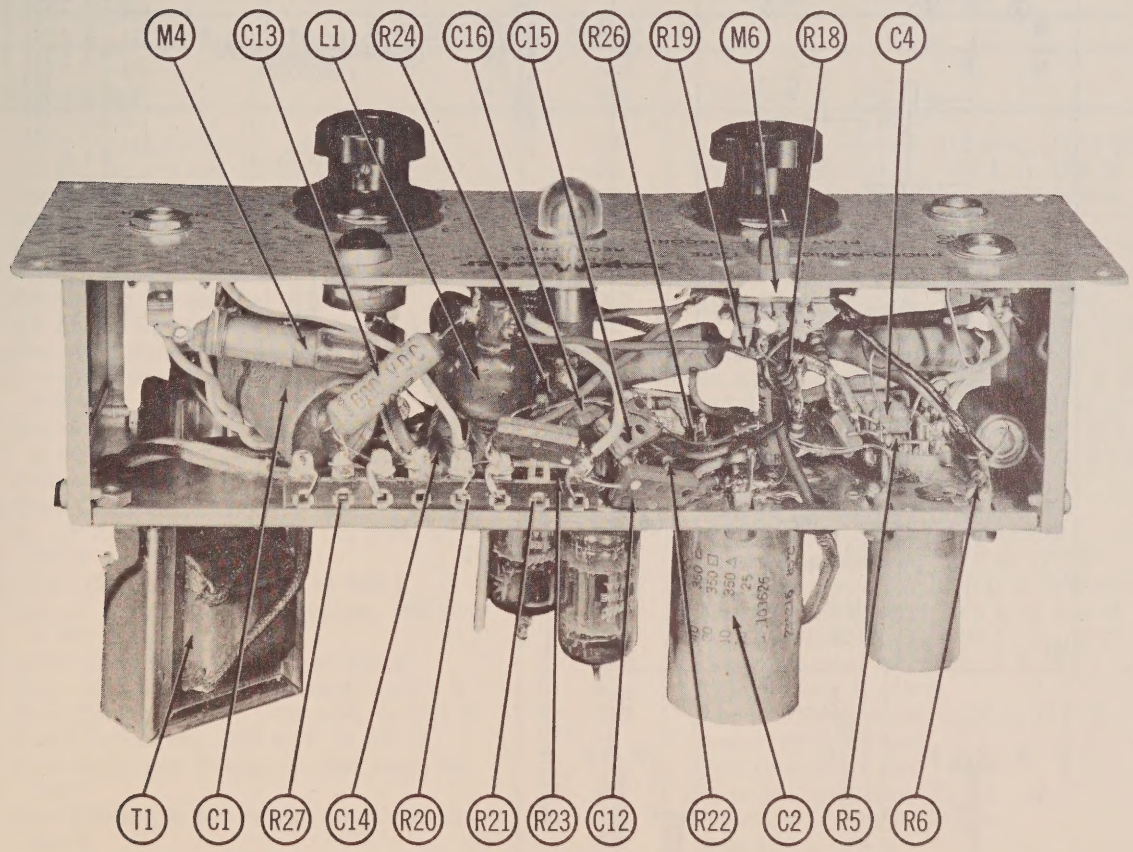
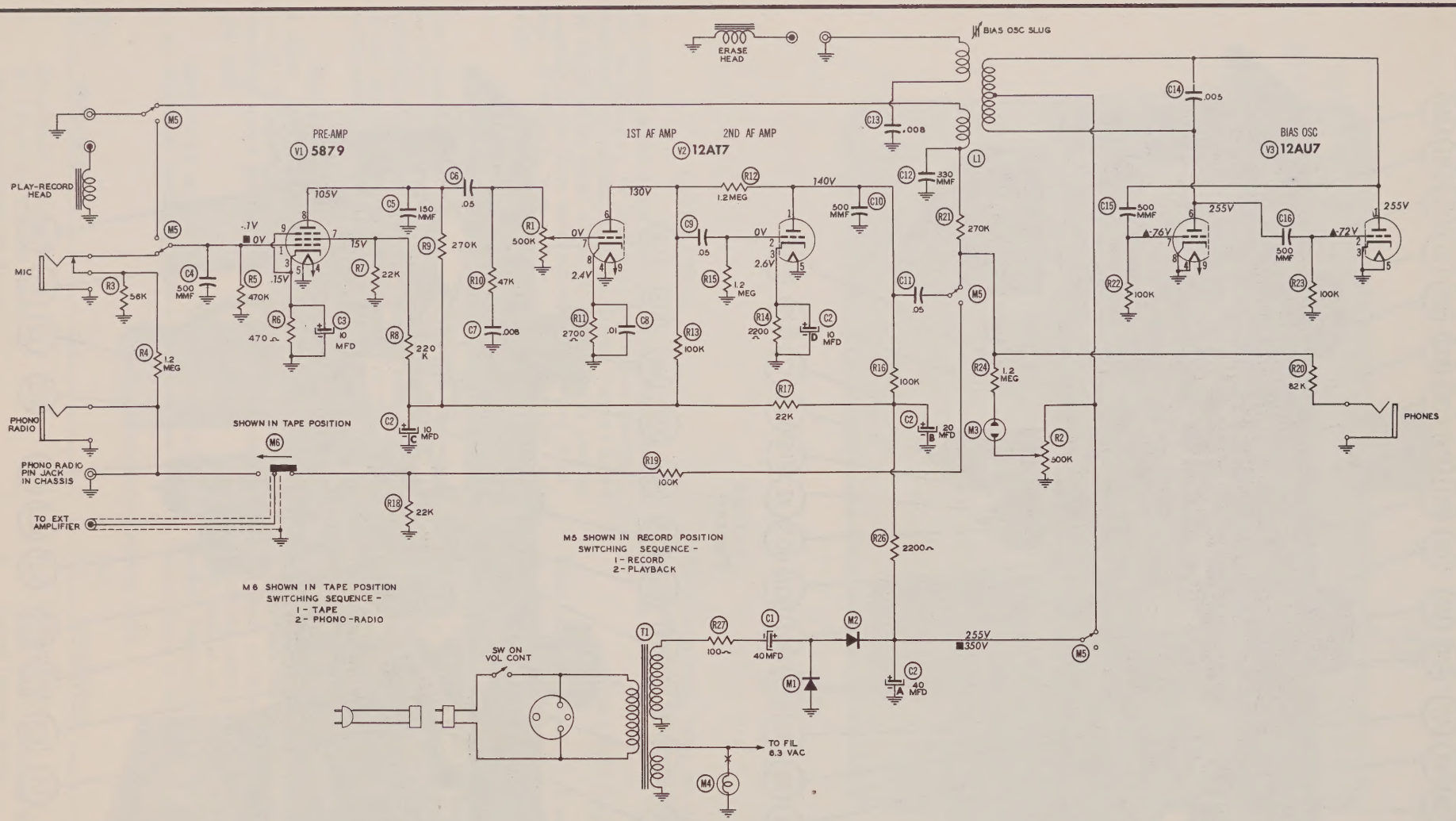


Figure 7



RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V 1	5879	56KΩ ▪600Ω	INF	470Ω	0Ω	.1Ω	INF	†170KΩ	†290KΩ	470Ω
V 2	12AT7	†100KΩ	1.2Meg	2.2KΩ	0Ω	0Ω	†115KΩ	75Ω	2.7KΩ	.1Ω
V 3	12AU7	†5.5Ω	100KΩ	0Ω	0Ω	0Ω	†4.5Ω	100KΩ	0Ω	.1Ω

ALL MEASUREMENTS TAKEN IN "RECORD" POSITION UNLESS OTHERWISE SPECIFIED.
▪ MEASURED IN "PLAY" POSITION.
† MEASURED FROM OUTPUT OF M2.

THE COOPERATION OF THE MANUFACTURER OF THIS EQUIPMENT MAKES IT POSSIBLE TO BRING YOU THIS SERVICE

A PHOTOFACT STANDARD NOTATION SCHEMATIC

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MECHANICAL PARTS LIST

Ref. No.	Description	Ref. No.	Description
11	Pressure Roller	42	Fast Forward Pivot Lever Return Spring
12	Baseplate	43	3-3/4" per second Idler Tension Spring
13	Fast Forward Control Knob	44	7-1/2" per second Idler Tension Spring
14	Set Screw for Control Knob	45	3-3/4" per second Idler Wheel
15	Spacer	46	7-1/2" per second Idler Wheel
16	Rubber Grommet	47	Rewind Drive Pulley
17	Take-up Shaft Assembly	48	3-3/4" per second Drive Wheel Mounting Arm
18	Take-up Drive Belt	49	Spacer
19	Brake Spring	50	7-1/2" per second Drive Wheel Mounting Arm
20	Detent Spring	51	Tension Spring for Rewind Pulley Brake
21	Tension Idler Pulley Assembly	52	Rewind Drive Belt
22	Tension Spring for Item 21	53	Rewind Pulley Brake
23	Take-up Brake Assembly	54	Rewind Pulley
24	Pressure Release Lever for Fast Forward	55	3-3/4" Idler Wheel Transfer Cam
25	Pressure Pads	56	7-1/2" Idler Wheel Transfer Cam
26	Tape Guide Assembly	57	Speed Change Cam
27	Recording Head	58	Fast Forward Drive Pulley Assembly
28	Head and Pressure Roller Lever	59	Fast Forward Drive Pulley Hanger
29	Head Adjustment Screw	60	Fast Forward Drive Pulley Disengagement Spring
30	Head Alignment Bracket		
31	Rewind or Supply Shaft Assembly	61	Fast Forward Drive Belt
32	Roller Plate Return Spring	62	Fast Forward Pulley
33	Roller Plate Stop Lug	63	Flywheel and Capstan Assembly
34	Pressure Arm Spring	64	Motor Drive Roller
35	Roller Plate Guide Screw and Bushing	65	Rewind Idler Wheel
36	Roller Plate	66	Rewind Idler Wheel Mounting Arm
36A	Arm Adjusting Plate	67	Rewind Idler Wheel Transfer Link
36B	Pressure Arm	68	Rewind Idler Wheel Tension Spring
37	Upper Mechanism Plate	69	Lower Mechanism Plate
38	Detent Slide	70	Motor Shock Mount
39	Brake and Head Pressure Release Lever	71	Motor
40	Fast Forward Control Cam and Shaft	72	Motor Fan
41	Fast Forward Pivot Lever Assembly	73	Rewind Pulley Transfer Cam

ELECTRICAL PARTS LIST

Ref. No.	Description	Ref. No.	Description
V1	5879, Pre-Amplifier	R4	Tone Compensation, 1.2 meg., 1/2 W
V2	12AT7, 1st and 2nd AF Amplifier	R5	Pre-Amplifier Grid, 470 K Ω, 1/2 W
V3	12AU7, Bias Oscillator	R6	Pre-Amplifier Cathode, 470 Ω, 1/2 W
C1	Voltage Doubler, 40 mfd. at 250 V	R7	Voltage Divider, 22 K Ω, 1/2 W
C2A	Filter, 40 mfd. at 350 V	R8	Pre-Amplifier Screen, 220 K Ω, 1/2 W
C2B	Filter, 20 mfd. at 350 V	R9	Pre-Amplifier Plate, 270 K Ω, 1/2 W
C2C	Decoupling, 10 mfd. at 350 V	R10	Tone Compensation, 47 K Ω, 1/2 W
C2D	AF Amplifier Cathode, 10 mfd. at 25 V	R11	1st AF Amplifier Cathode, 2700 Ω, 1/2 W
C3	Pre-Amplifier Cathode, 10 mfd. at 25 V	R12	Voltage Divider, 1.2 meg., 1/2 W
C4	Pre-Amplifier Grid Filter, 500 mmf. at 500 V	R13	1st AF Amplifier Plate 100 K Ω, 1/2 W
		R14	2nd AF Amplifier Cathode, 2200 Ω, 1/2 W
C5	Pre-Amplifier Plate Bypass, 150 mmf. at 500 V	R15	2nd AF Amplifier Grid, 1.2 meg. 1/2 W
		R16	2nd AF Amplifier Plate, 100 K Ω, 1/2 W
C6	Audio Coupling, .05 mfd. at 400 V	R17	Decoupling, 22 K Ω, 1/2 W
C7	Tone Compensation, .008 mfd. at 600 V	R18	Voltage Divider, 22 K Ω, 1/2 W
C8	1st AF Amplifier Cathode, .01 mfd. at 400 V	R19	Voltage Divider, 100 K Ω, 1/2 W
		R20	Tone Compensation, 82 K Ω, 1/2 W
C9	Audio Coupling, .05 mfd. at 400 V	R21	Tone Compensation, 270 K Ω, 1/2 W
C10	2nd AF Amplifier Plate Bypass, 500 mmf. at 500 V	R22	Bias Oscillator Grid, 100 K Ω, 1/2 W
		R23	Bias Oscillator Grid, 100 K Ω, 1/2 W
C11	Audio Coupling, .05 mfd. at 400 V	R24	Level Indicator Network, 1.2 meg., 1/2 W
C12	Tone Compensation, 330 mmf. at 500 V	R26	Filter, 2200 Ω, 1/2 W
C13	Tone Compensation, .008 mfd. at 600 V	R27	Parasitic Suppressor, 100 Ω, 1/2 W
C14	Fixed Trimmer, .005 mfd. at 600 V	T1	Power Transformer
C15	Bias Oscillator Feedback, 500 mmf. at 500 V	L1	Bias Oscillator Coil
		M1	Selenium Rectifier, 35 MA
C16	Bias Oscillator Feedback, 500 mmf. at 500 V	M2	Selenium Rectifier, 35 MA
		M3	Neon Bulb, NE-51
R1	Volume Control, 500 K Ω, 1/2 W	M4	Pilot Light
R2	Neon Flash Control, 500 K Ω, 1/2 W	M5	Switch (Play-Record)
R3	Microphone Shunt, 56 K Ω, 1/2 W	M6	Switch (Phono-Radio-Tape)